SOVIET LIFE

FREE HEALTH CARE

TURKMENIA AND UZBEKISTAN TODAY

POET MIKHAIL LERMONTOV

October 1984 • $1.25





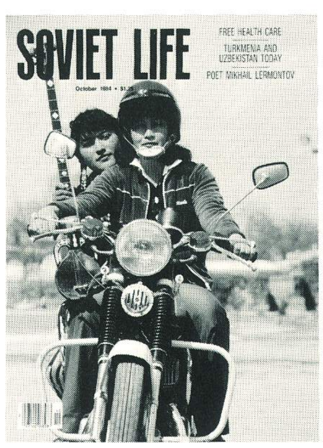
17 **Poet Mikhail Lermontov was also a fine artist, says literary critic Irakli Andronnikov.**



October 1984, No. 10 (337)

SOVIET LIFE

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Front Cover: Women in the Central Asian republics have come a long way in the past 60 years. See pp. 2, 12 and 44. *Photograph by Sergei Lidov.*

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LETTERS TO THE EDITOR

I found my first issue of SOVIET LIFE to be both entertaining and informative. Thank you for the effort on behalf of the Soviet Union to let America realize that we are not so different after all. I particularly enjoyed the article about the pyramids on Mars. It is illogical to assume that Earthmen are the only beings in this universe. Furthermore, it is time that both the Soviet Union and the United States begin to jointly work toward the discovery of such geological wonders or objects created by other forms of intelligence. We must throw down the swords and shake hands. Our planet is on the brink of destruction unless the superpowers begin to work toward assured peace for the whole planet. Political idealism is not a logical reason to harm any life form on any planet in any galaxy. If we do not look for the reality of a complete Earth at peace, we might be the same type of landscape as Mars, barren, and destroyed by man's inhumanity to man.

Richard Milks
San Francisco, California

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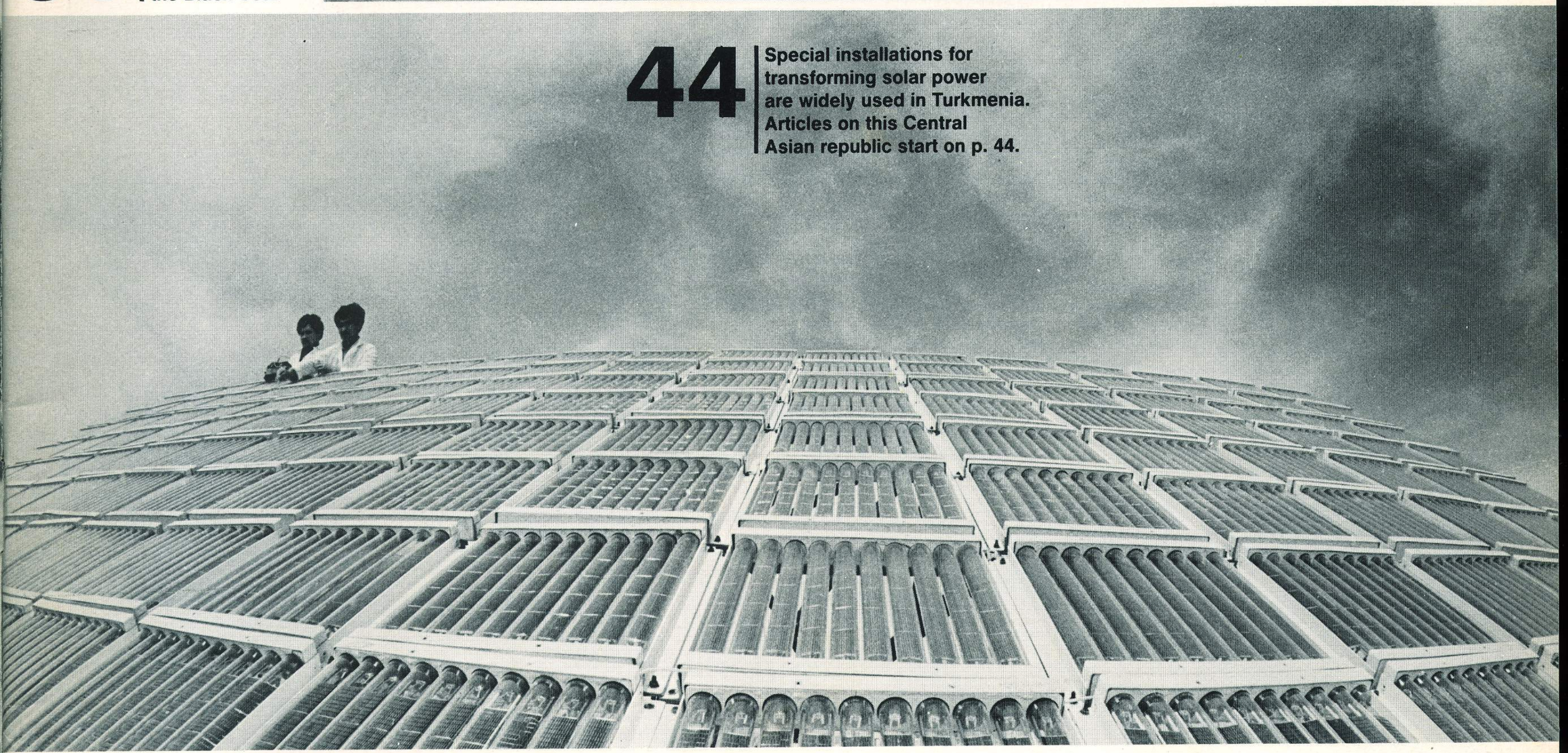
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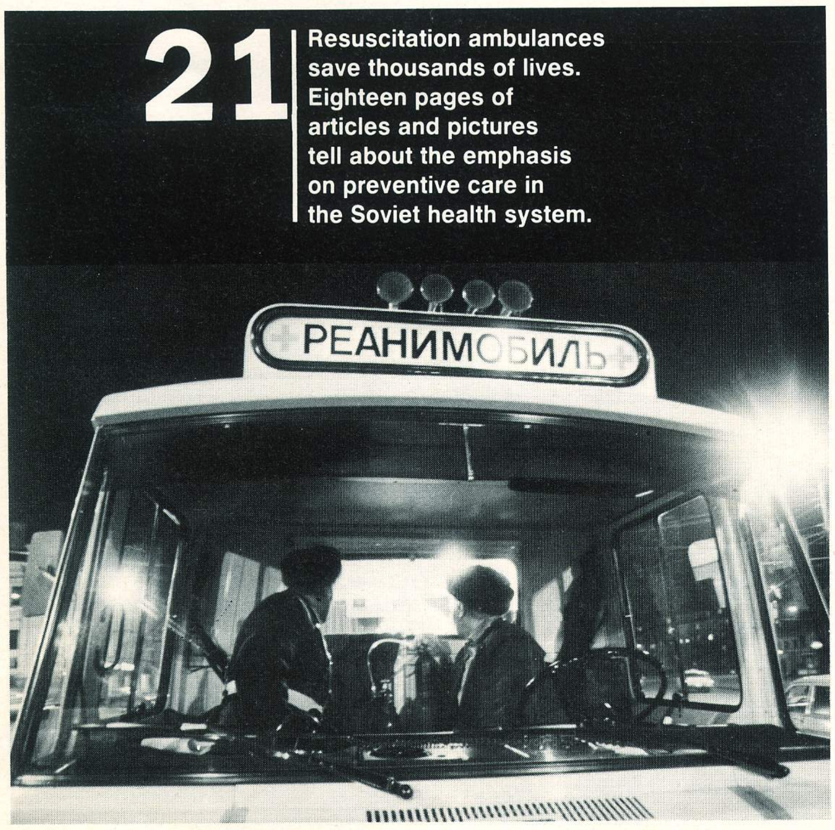


50 Anatoli Zybin's pictures and text on a carnival on the coast of the Black Sea.

62 Hang gliding is an exciting sport, especially from Elbrus, the highest mountain in Europe, writes Aloiz Fil.



44 Special installations for transforming solar power are widely used in Turkmenia. Articles on this Central Asian republic start on p. 44.



21 Resuscitation ambulances save thousands of lives. Eighteen pages of articles and pictures tell about the emphasis on preventive care in the Soviet health system.

EDITOR'S NOTES

HISTORY has preserved no beautiful legend describing the foundation of the Tashkent oasis on the famed Silk Road at the foot of the Tien Shan 2,000 years ago. That legend was probably carried away by sandstorms. However, there is a modern legend that history will preserve. This is the legend of a new Tashkent.

On April 26, 1966, at 5:23 A.M. the blind outrage of subterranean powers stopped the city clock.

The whole country came to Tashkent's rescue. The Earth tremor had not yet stopped when the blueprints of new residential areas with quake-resistant blocks of apartment houses appeared on the drawing boards of Tashkent's architects. A new city was born on the ruins.

October 7, Constitution Day, is a national holiday in this country. Seven years ago on that day a new Constitution of the USSR was adopted.

The Constitution declares and guarantees the legal and actual equality of all the ethnic groups, large and small. Their cooperation and mutual aid are becoming more and more productive. The Tashkent incident is only one example. Each republic makes its own contribution to the common prosperity and the whole country's harmonious development.

Uzbekistan and Turkmenia mark their sixtieth anniversary this October. Our articles on these two republics sum up their past and outline their plans for the future.

This issue also describes how the state guarantees one of the constitutional rights of each Soviet citizen—the right to health protection.

UZBEKISTAN: SIXTY YEARS OF PROGRESS



Inamdzhon Usmankhodzhayev, First Secretary of the Central Committee of the Communist Party of Uzbekistan.



The First Secretary of the Central Committee of the Communist Party of Uzbekistan, Inamdzhon Usmankhodzhayev, received Boris Alexeyev and Elparid Khodzhayev, SOVIET LIFE correspondents, in his study on the sixth floor of a building in the center of Tashkent, the capital of Uzbekistan. This interview on the eve of the sixtieth anniversary of the republic is the first he has given our magazine since he was elected First Secretary in November.

Q: It is obvious that tremendous technological and industrial progress has been made in Soviet Central Asia and that there have been sweeping changes in the people's material and cultural standards. Will you please give some examples?
A: Let's take industry, the main indicator of the republic's development.

Apart from the cotton-processing and oil-refining industries, we have created and developed ferrous and nonferrous metallurgical, machine-building, electrotechnical, chemical, mining and coal industries. Before the October Revolution of 1917, even *ketmens* (a kind of spade) were imported. Today the items Uzbekistan produces include tractors, excavators, cotton harvesters, refrigerators and electronic equipment. We also have an aviation production association.

Q: Can you expand on this?
A: If I start enumerating everything, we'll be here till morning. The exhibits in our history museum show very well what prerevolutionary Uzbekistan was like: a land with a patriarchal way of life, a feudal mode of production, semi-handicraft enterprises and a subsistence peasant economy. The population was illiterate and had no civil rights whatsoever.

Today we are a sovereign Soviet republic with a powerful industry and highly mechanized agriculture. The literacy of our population has reached 100 per cent; we have a broad network of schools, institutes of higher learning and scientific establishments. Medical services in our republic are free.

Q: Is any useful purpose served now in recalling what life was like in prerevolutionary Uzbekistan?
A: I believe there is. The comparison is very instructive. It helps show what our republic has achieved under socialism.

Q: You mentioned the elimination of illiteracy. It is obvious that this is one of the most important achievements of the republic in the years of Soviet power. Is that not so?
A: Yes it is. About half of our budget, some 3.5 billion rubles (205 rubles per capita), is annually spent on social and cultural needs and on science.

Education in the republic is free and is financed by the state. We have calculated that one-third of the 17 million inhabitants of our republic are furthering their education.

There are 9,350 general education schools in the republic and 180 scientific institutions, including institutions of higher learning. Every year about 120,000 people receive a secondary or higher education. This progress has been achieved with the assistance of the Russian people.

Vladimir Lenin, the founder of the Soviet state, marked the beginning of the efforts against illiteracy by his decree "On the Abolition of Illiteracy." The Soviet state rendered Uzbekistan tremendous assistance in accomplishing this far from easy task. In the second half of 1920 alone it allocated 10 million rubles to us for this purpose. On Lenin's initiative, the first Soviet Central Asian university was opened in Tashkent, the capital of Uzbekistan.

Today, not only do we have 100 per cent literacy in the republic but we are also training thousands of young men and women from 75 Asian, African and Latin American countries.

Old Uzbeks say now that their children speak Uzbek much better than they do themselves because the children were taught the language at school and know all its subtleties and because the Uzbek language has become much richer. At the same time, young Uzbeks also speak Russian better then their grandparents.

Q: Isn't there a contradiction here?
A: Not at all. The Russian language facilitates communication among the nationalities in our country and is therefore a uniting factor. This is a political, economic and cultural necessity. The Russian language does not damage the Uzbek language; on the contrary, it promotes the development of our language. New words, idioms and definitions have appeared that did not exist before.

Those people in the West who speak about "Russification" seem to forget that in some Asian and African countries English and French are still the official languages.

Q: Would you say a few words about art and culture?
A: I have already mentioned that we allocate considerable sums of money for social and cultural needs. There are 30 state theaters in the republic, including those for ballet, grand opera and operetta. There are several theaters that perform plays for children and many concert groups. We have educational institutions that train actors for different types of theater, two film studios that produce more than a hundred films a year, various museums, community centers and libraries. As many as 85 magazines and 287 newspapers are published in Uzbekistan.

Q: While touring your republic, I noticed that a lot of restoration work is going on. What are you restoring?
A: As many as 7,056 monuments of architecture, art, archeology and nature are under the protection of the state in Uzbekistan. We have already restored 240 of them.

Every year we increase allocations for these purposes from the republic's budget and from other sources.

Q: Before the Revolution women in your republic did not have any rights at all. Today, however, there is even a woman conductor in the Tashkent Opera and Ballet Theater. [See the article on pages 12-14.] A rare phenomenon, isn't it?
A: I regard the emancipation of women as the greatest achievement of socialism. For many generations Uzbek women were humble slaves. The cape that hid a woman's figure and the heavy horsehair veil worn over the face separated women, like a wall, from the outside world. After the October Revolution of 1917 they decided their own destiny.

Today Uzbek women take an active part in governing the state. Many of them have been elected to the Supreme Soviet of the USSR, the highest legislative body in our country. There are 178 women in the Supreme Soviet of the Uzbek Republic. Women account for nearly half the deputies in the local Soviets. Many women in Uzbekistan occupy high government posts.

Nobody is surprised now to see a woman doctor, a woman scientist, a woman engineer or a woman actor.

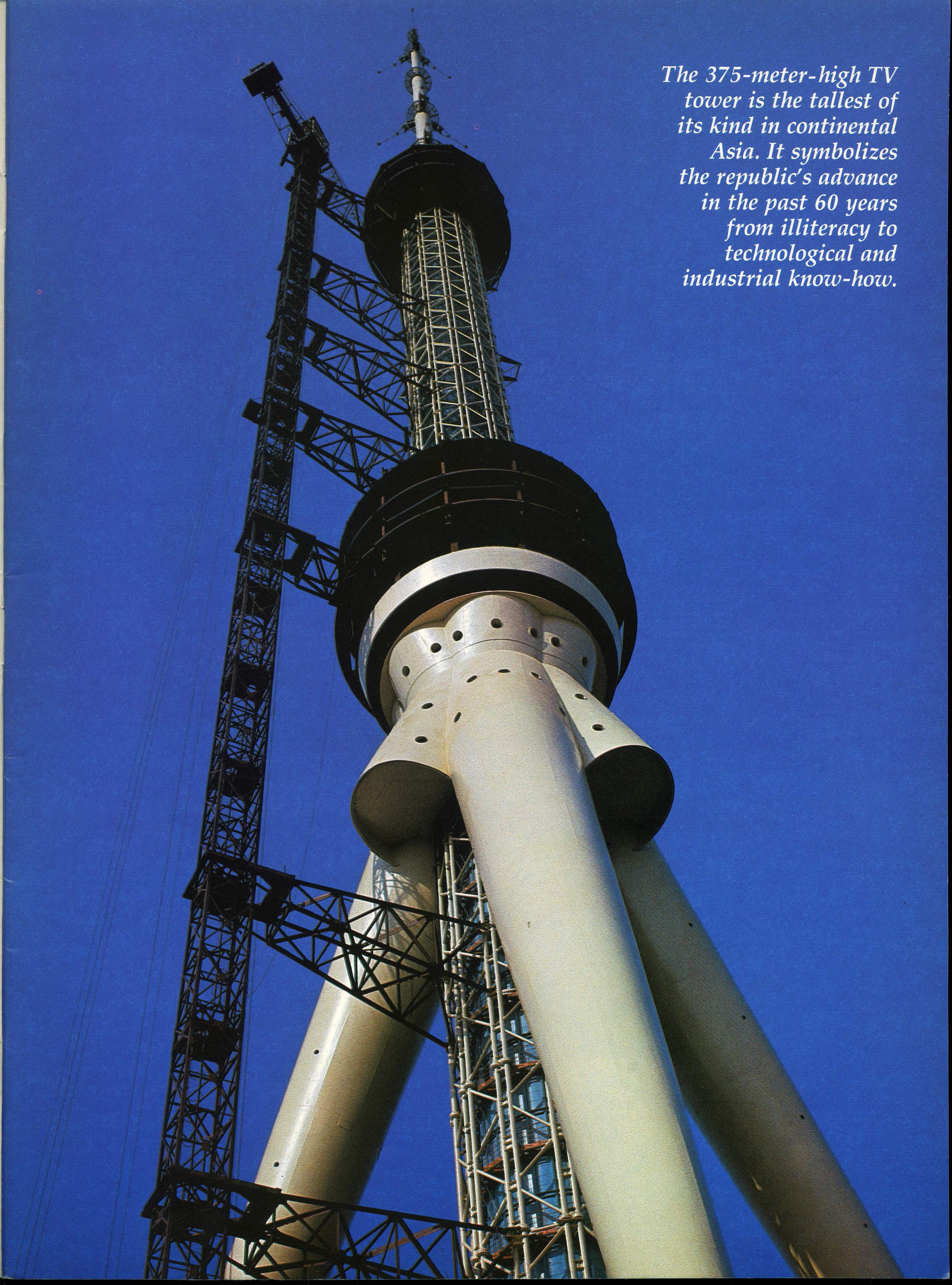
Q: Would you tell me about the republic's international contacts?
A: Representatives of the Uzbek Soviet Socialist Republic take part in the activities of many international organizations, including specialized institutions of the United Nations.

In the past few years, its parliamentary, governmental, economic, cultural, scientific and sports contacts with foreign countries have grown considerably.

Tashkent, Samarkand, Bukhara, Fergana and Urgench have hosted many international conferences, seminars, symposiums, festivals, exhibitions, traditional writers forums and film festivals of the Asian, African and Latin American countries.

The Uzbek Republic takes an active part in economic, scientific, technical and cultural exchanges.

The diversified nature of our economy makes it possible to maintain economic contacts with practically all the foreign countries with which the Soviet Union has trade agreements. Among the Soviet republics Uzbekistan is third, after the Russian Federation and the Ukraine, in the amount of goods it exports. ■



The 375-meter-high TV tower is the tallest of its kind in continental Asia. It symbolizes the republic's advance in the past 60 years from illiteracy to technological and industrial know-how.

SURKHAN: THE VALLEY REBORN

By Elparid Khodzhayev
Photographs by Nabi Utarbekov

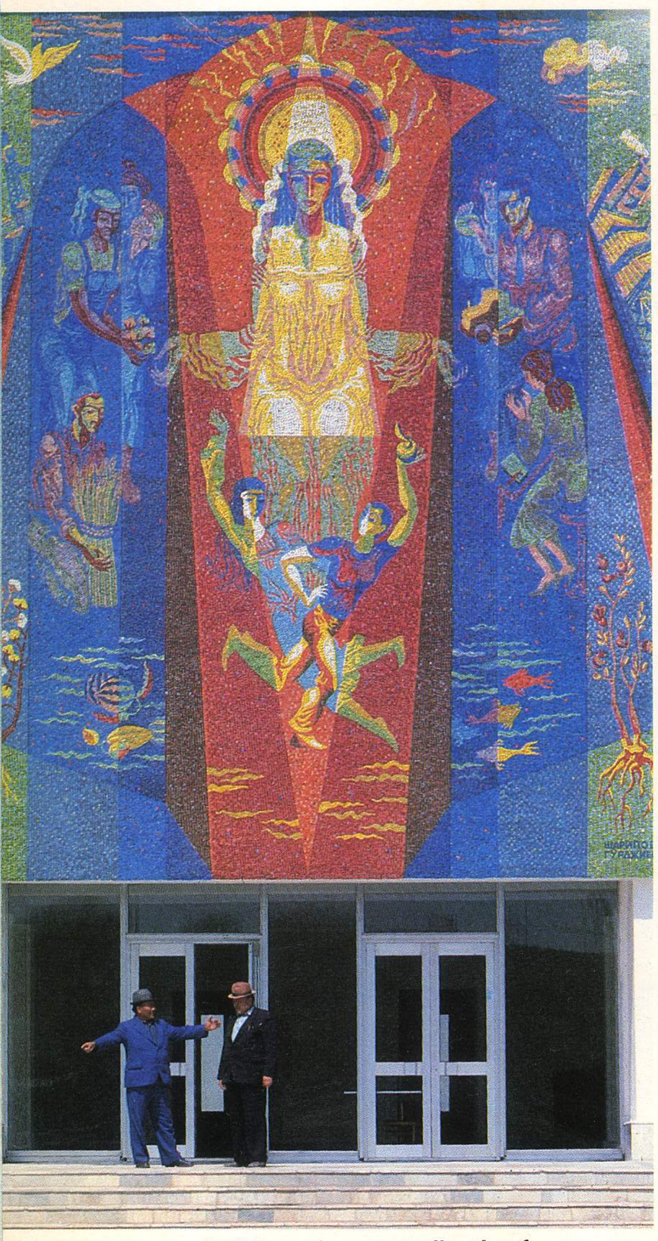
The collective farm in the Surkhan Valley started out with 10 horses, 16 oxen and 10 wooden plows. Today it is a million-ruble enterprise covering 156,000 hectares.



The Bakhor Dance Company has been applauded in many countries for its excellent performances. *Bakhor* means "spring" or "youth" in Uzbek.



"To ensure a still better life for our grandchildren and great-grandchildren, we'll continue to look for and find more efficient ways to work. After all, we are creating our future."



This is the building of a new collective farm club. The painting was done by Tashkent artists.

Baimat Taishiyev is 96 years old. He remembers very well the time when the Surkhan Valley was not as sunny and green as it is today but was a swampy area overgrown with reeds.

He remembers very well that people used to live there in huts built on piles driven into the silty bottom of the swamp. That was how his father and grandfather lived. That was how people had always lived in that area.

Today, seeing the thriving fields and orchards which lie around well-ordered villages, called *kishlaks* here, it's hard to believe old Baimat's story. But it was really so.

"Everything you see here today we've done ourselves, with our own hands. We did it after the Soviet Government was established in our valley," the old man continued. "We all pitched in and worked together." Taishiyev and a score of people like him founded a collective farm in the Surkhan Valley 60 years ago, one of the first in Uzbekistan. It started out with 10 horses, 16 oxen and 10 wooden plows.





Local Museum

Bobomukhad Amanov, the director of the association, pointed out the same thing.

"I am 66 years old," he said. "Life keeps changing. Our fathers never even imagined that people could be interested in so many things and have the opportunity to realize them in their work and life. And our children have no idea of what life was like here for their forefathers. We need a museum whose exhibits would show how we started and what difficulties we had to go through."

Amanov said that three years ago. ▶



Rustam Khalbekov is the accountant of the agro-industrial association. Left: Baimat Taishiyev (left) was one of the founders of the first collective farm in the Surkhan Valley. Below: The son of a shepherd, Bobomukhad Amanov is head of the agro-industrial association.

Our Farm Today

The collective farm has developed into an agro-industrial association covering 156,000 hectares. It breeds sheep and cattle, cultivates cotton, grapes, pomegranates and vegetables, and has a big bee-keeping section.

The agro-industrial association, of which there are a few in the country so far, exemplifies the current Soviet policy in agriculture. Utilizing the latest achievements in science and technology, it is improving the living conditions of the farmers by raising the productivity of their labor and thus agricultural production. Every year cotton growing alone brings two million rubles' worth of net profit to the members of the agro-industrial association in the Surkhan Valley.

"When we united into a collective farm we were able to wipe out poverty and illiteracy," Baimat Taishiyev said. "Today my grandchildren and great-grandchildren devote their leisure time to reading, music and sports. When I look at them and see how good their life is, I can't help worrying that they might take all this for granted."



Today the local museum is very popular in the area. The two-story building in which it is housed was specially designed. Its 1,200 exhibits include fragments of medieval jugs and bowls found during archeological excavations, ancient coins and clothing, and also some household articles of our day, like TV sets, tape recorders and radios. There are even models of the agricultural machines working in the collective-farm fields today.

Every day local residents and tourists visit the museum. Their guides are senior pupils of the secondary schools. Of course, the youngsters have some difficulties. They don't know the answers to all the questions they're asked. To help them remedy this, the management of the association has sent 17-year-old Farida Niyazova to Tashkent, capital of Uzbekistan, to study art, and before long the local collective farmers will have their own art expert.

Considerations of an Accountant

Rustam Khalbekov, a 27-year-old accountant, was against setting up the museum, not because he rejected the idea per se, but because the association needed so much money to renovate the stockbreeding section. Besides, work on a 21-hectare children's recreation park in the residential section of the association had just been finished. And a sports stadium had also been built not long before. However, the general meeting of the collective farmers (the highest governing body of agricultural cooperatives) voted for the museum and allocated the money for it.

The general opinion of the farmers was that the association's prospects for a bumper crop were good and, thanks to high state purchasing prices, the farm certainly could find the money for the museum.

Khalbekov graduated from the Tashkent Institute of Economics and came back to his native collective farm. By the way, all young people from the valley who are sent to cities to attend agricultural, teachers or technical institutes come back to the village when they graduate. Everyone is given work here.

The 15 secondary schools of the agro-industrial association are attended by more than 7,000 boys and girls.

The association also has its nursery schools and kindergartens, a hospital with 150 beds, a polyclinic and a community center. Not long ago a new house of culture and a children's music school were built.

When the children's music school was under construction, the management of the association encouraged young people interested in music to become professional music teachers. As a result, four years ago, for the first time in their history, the local farmers sent a group of them to an arts and drama institute and gave them a monthly stipend. Naturally, when they graduated, they came back to their native village. Now people from all the surrounding villages attend the plays and concerts they direct.

That's what life in the Surkhan Valley is like today, and the plans for the future are even more exciting.

Creating Their Future Today

Association director Amanov has a model in his office of the future Surkhan Valley.

Every family will live in a two-story house with a large plot of land around it. The agro-industrial association will build new canning factories, a ginnery and a dairy. The association has been developing land in the foothills, which is called *fashnabad* in Uzbek, (cultivated steppelands). Water conduits, gas mains and wide concrete roads are being built, and electricity is being brought in.

Every person in the Surkhan Valley can see this model. And in the local museum everyone can see that our progress has been ensured by a handful of people who believed in teamwork even though they had only 10 horses, 16 oxen and 10 wooden plows.

"To ensure a still better life for our grandchildren and great-grandchildren, we'll continue to look for and find more efficient ways to work," said Amanov. "After all, we are creating our future today." ■

DOCUMENTARY: FIFTY YEARS OF MY LIFE



Malik Kayumov (second from right) has been filming the history of Uzbekistan. He is one of the first Uzbeks to make documentaries. In 1938 his film **The Tashkent Textile Mill** *was awarded the Gold Medal at the New York World's Fair. These pages contain a sampling of his rich photo collection and his comments on his work.*

Top to Bottom:
This is a still from my documentary *Yuldash Akhunbabayev*. Here he is (right), the first President of the Presidium of the new republic. The son of a farmer and a farmer himself, Akhunbabayev was greatly respected by the Uzbeks and did a lot for the development of the economy, culture and science of Uzbekistan. He died in 1943.
President of the USSR Mikhail Kalinin (third from left) with Faizulla Khodzhayev, First Chairman of the Council of Ministers of Uzbekistan, on his right and Yuldash Akhunbabayev on his left. The photo was taken in 1925.









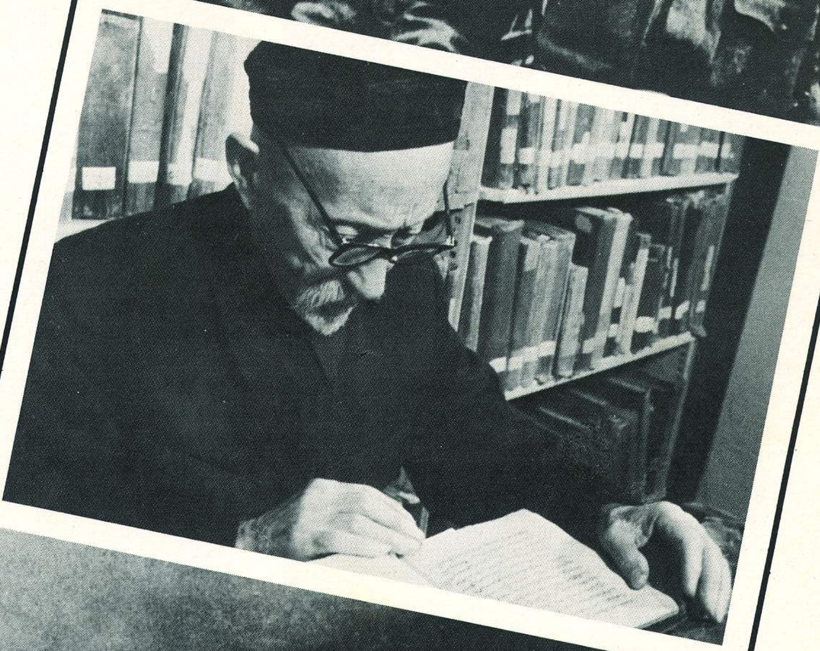




Top to bottom:
Still from the film *Land and Water Reform.* The peasants had neither until after the Revolution. Everything belonged to the *bais*, the rich landowners. Soviet Uzbekistan has a highly developed, diversified and mechanized agriculture.
Uzbek women were cut off from the world by the black veil they were forced to wear in public. Now they are active participants in every area of the republic's life.
A still from a film showing Nadezhda Krupskaya (Lenin's wife), who was Deputy Minister of Education of the Russian Federation, at the Tenth USSR Congress of the Young Communist League, held in Moscow in April 1936.
This is how cotton used to be harvested. The camel was the only agricultural "machine"—a far cry from today's mechanized agriculture, which yields more than six million tons of raw cotton a year.

Top to bottom:
I took this photo at the front in 1942. When nazi Germany attacked the Soviet Union, hundreds of thousands of Uzbeks joined the army. Many died defending the country, including Usman Valiyev, far right. Unfortunately, I don't know the names of the other two.
I have tried to tell about the Alisher Navoi State Library in one of my films. Its pride is the collection of sixteenth to nineteenth century books, chiefly Oriental manuscripts.
A still from a film made in 1939 about Zulfia, Uzbekistan's first woman poet. She is 69 years old now. The man on the right is her husband, Khamid Alimdzhan, also a well-known poet.
A still from a film about teaching children to read and write in the early 1920s. Only one out of 100 Uzbeks could read and write in those days. Now everybody can.







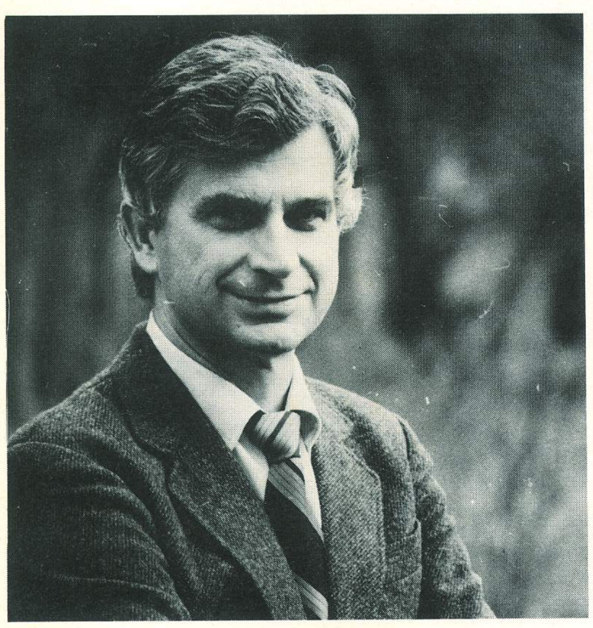


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Who Contributes Money
and

The movement to collect money for the defense of peace began in the fifties in the Soviet Union. It turned out to be so massive that an organization of volunteers was needed to administer it. That is how the Soviet Peace Fund came to be. Today 85 million Soviet citizens—every third inhabitant of the country—volunteer their services to carry on its activities. In the Ukraine, where I live, the contributions have grown 15-fold over the past 10 years. They come in different forms and from all kinds of people, for example, people who volunteer to work without pay during their free time (this is called a *subbotnik**) and contribute the money they would have earned; the money earned by schoolchildren for old newspapers or medicinal herbs they have collected; part of the students' earnings during their vacation; prizes and remuneration for inventions; authors' royalties; box-office receipts for specially organized play performances, concert programs, lectures and sports programs.

Here are the comments of some of the donors of these voluntary contributions.



Singer Anatoli Solovyanenko, 50, People's Artist of the USSR, soloist of the Opera and Ballet Theater in Kiev, contributed the money that accompanied his Lenin Prize medal.

I have toured many countries, singing in operas and concerts in Italy, Canada, the United States and Australia, and I have never met anyone among my foreign colleagues who considers the Russians their enemies or would say that they threatened them. Many of the singers are performers of world stature. I often talked to them about the inseparable connection between the arts and peace. Like myself, they are concerned about the present international situation. They understand that the muses may become silent forever if modern artillery guns begin talking. And, naturally, we are all alarmed for the fate of our children.

I have two sons, and I would not want my boys to go through what I did in my childhood. I belong to the generation that was called "the children of war" in the Soviet Union. In 1941, when Hitler Germany attacked the Soviet Union, I, along with many other people my age, was evacuated from the Ukraine, where hostilities were raging, to the eastern areas of the country. I still remember that trip with bombs falling all around us. Nor have I forgotten my hunger, when a handful of grain soaked in water was a delicacy. No, I would not wish such a childhood on anyone's children nor on any decent grownup either.



Fyodor Derevsky, 38, is one of 48 children adopted and raised by Alexandra Derevskaya, a Ukrainian woman. In recognition of her efforts, the International Planetary Center in Cambridge, Massachusetts, has named a new small planet discovered by the astronomers on the staff of the Crimean Astrophysical Observatory of the USSR Academy of Sciences after her.

OUR mother literally picked up children during the war. She took the most emaciated little orphans from children's homes, the ones who had been evacuated from the city of Leningrad during the siege. Some of us were so small we didn't even know our names. I was 12 months old when I joined the Derevsky family. They gave me a name, care, love, a home and family traditions. I don't know my nationality. But could that matter in a family where Russians, Ukrainians, Byelorussians, a Bashkir, a Chuvash, a German and a Tatar were sisters and brothers? All of us are Derevskys now.

Many of my brothers inherited our father's vocation. Like Yemelyan Derevsky, they are now geologists or oil workers. That's why we live thousands of kilometers apart. Generally, though, many vocations are represented in our family. I work in the transport shop of the Arsenal Plant in Kiev.

The younger Derevskys now have a total of 215 children. There are grandchildren as well. We want to pass on to the younger generation of our family the best traits of the character of our wonderful mother: her unselfish love for people and respect for a dedicated and honest life. And one more thing—her complete rejection of injustice and of war, which is its extreme manifestation and which brings so much grief to people.

Our mother died of an incurable heart disease when she was 59. A street in our native Ukrainian town of Romny was named after her. The town has also raised a monument in her memory. And we, her children, assemble in our home each year on April 23, her birthday. We can't help recalling the war, which was the reason we had lived under one roof. That's why another tradition of our family is to contribute to the Peace Fund on that day as much money as we can collect.



Anna Rybachenko, 60, is a veteran of World War II and an inhabitant of the city of Odessa on the Black Sea.

WHEN nazi criminals are caught, they usually say they can't remember the details of what happened many years ago. Meanwhile the people who suffered because of the war, the victims of the Nazis, have forgotten nobody and nothing.

I died twice. When the war began, I went to the front. I was a commander of a machine-gun platoon. I was seriously wounded in the Donbass, the Ukraine, and taken prisoner. The fascists sentenced me to be shot. It was a miracle that I escaped. Soviet teenagers, practically children, saved my life.

When my wound healed, I crossed the front line and continued fighting, this time in Stalingrad. Again I was hurt. The wound was so serious that my name was put on the list of those killed in action. My name is still on a common grave of Stalingrad defenders.

"Terrible and unusual," someone unaware of

*From the word *subbota*, which means Saturday.

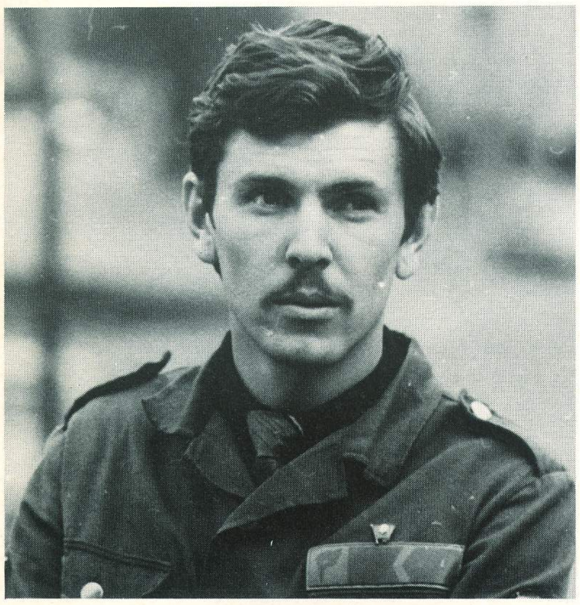
CTATES SCIENCE

By Sergei Kharchenko
SOVIET LIFE correspondent in the Ukraine

to the Soviet Peace Fund Why

what the war was like for my country might say. But when I began attending the meetings of war veterans, peace rallies and ceremonies to honor soldiers' widows, I learned about quite a few people whose fates were similar to mine. And from chance conversations every day.

I am on pension now, but I keep working. I'm an insurance inspector, a job that is not taxing for my age and physical condition. When I pay business calls on the people of Odessa in their homes, we often talk about what all of us went through during the war and about everyone's concern for peace. When people learn about the Peace Fund, they always ask how they can make contributions to it.



Sergei Rakovets, 18, is a student at the Kiev Polytechnic Institute.

DURING their vacation, Soviet college students work at various construction sites in the country or in the service industries. This is beneficial both for us and for the state: We do useful work, and we earn money, which always comes in handy.

In 1980, 26 students established a construction team. They decided to contribute half of their earnings to the Peace Fund. There are other student teams, of course, which use the money they earn to buy something for themselves, or TV sets, rugs and furniture for children's homes, or in other ways. The team members vote on how they should spend the money.

In the summer of 1983 we worked in the Far East, building a garage for 40-ton dump trucks and earned 40,000 rubles. We contributed 25,000 to the Peace Fund and spent the rest on food, recreation, and traveling.

Our family is a happy one. Father, 50, works as a truck driver, and Mother is a textile worker. They were children during the war against Hitler's fascists. But I know about the war from books, movies and my visits to such places as the Brest Fortress, whose garrison was the first to parry the aggressors' attack. Our team visited Brest. It goes without saying that just seeing it reinforced our decision to help the Soviet Peace Fund. But that wasn't the only thing. We young people are appalled by the idea that the future of the world, our future, is being threatened again today.



Academician Andrei Romodanov, 62, director of the Kiev Institute of Neurosurgery, former staff surgeon of a military hospital.

MY HEART aches when I see the aging invalids of World War II. Many of them still have wounds which have not healed, and many are suffering from osteomyelitis caused by battle wounds. To this very day surgical forceps are removing slivers of metal from their bodies. Some of the survivors have severe forms of epilepsy and other serious conditions caused by their wounds. Surgeons in the United States, Canada, Great Britain, France, West Germany and Japan face similar problems. We have discussed the subject with Professor Robert White, a neurosurgeon from Cleveland who is famous in the United States. No, *that* war has not ended yet for many people. But if another war is unleashed, it will be even more horrendous.

As a member of the Soviet Committee of Physicians for the Prevention of Nuclear War, I am aware of the world public's increased attention to the warnings issued by medical workers. In every country I visit, the general mood is this: No political differences can be allowed to stand in the way of our uniting to protect the peace.

People I meet also ask about the Soviet Peace Fund: Where does it get money from, and what is the money collected spent on? I tell them that the voluntary contributions are spent exclusively on financial aid to organizations working for the consolidation of peace, the banning of all types of weapons and the development of friendship and cooperation among nations.

Who "dictates" to us the decision to take part in that? Our conscience does.

Amazing people come to the Peace Fund. I recently met a simply dressed, quiet middle-aged woman there. She put two gold medals on the table and said: "My great-grandmother was awarded one in 1888, and my grandmother the other in 1906, both for excellent school marks. I have no money to spare, but I ask you to accept these family keepsakes for the cause of peace."



Archbishop Agathangel Vinnitsky and Braslavsky, 45, head of the Khmelnitsky diocese.

MY FATHER and one of my brothers were killed at the front. Another brother was maimed, and my first cousin lost a leg there. The rest of us—four little children—were left with our mother.

I often visit various parishes and village churches. We pray for one thing only: to prevent new evil deeds against humankind. Archpriest Ivan Lukanov, dean of the Orthodox Church in the city of Zhmerinka, also prays for that. His mother, who became a widow at the age of 28, was left with five children, two of whom starved to death. Farmer Christina Pavlyuk also prays for that. The war robbed her of her husband and two sons. She is an old woman now without the comfort of a family.

People crave consolation. And our consolation lies in the understanding that our sacrifices have not been made in vain and that people will prevent a new war. Therefore, both the congregation and the clergy of the Khmelnitsky diocese in the Ukraine wholeheartedly agree with the American Catholic bishops who proclaimed any nuclear war, either "limited" or "protracted," a mortal sin. And this is what everybody in my country thinks, believers and Communists, the young and the old, everybody who craves goodness and life. And the Peace Fund provides an opportunity to contribute to this.

The clergy and the congregation of the Khmelnitsky diocese contributed 230,000 rubles to the Peace Fund last year. This money is used to let everyone spread the words of the Prophet Isaiah: "Let us beat our swords into ploughshares, and our spears into pruning hooks." ■







«IT'S A CHALLENGE TO CONDUCT AN ORCHESTRA»

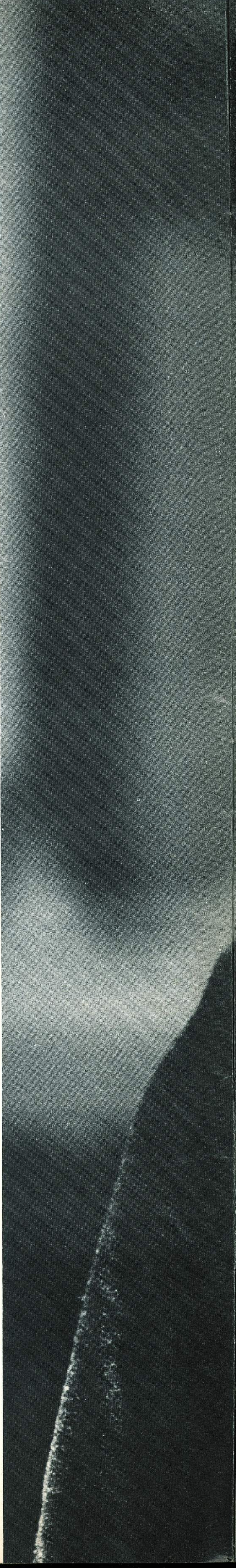
By Vladimir Mizhiritsky
Photographs by Alexander Grashchenkov

Women's liberation hasn't yet reached orchestra conductors. Dilbar Abdurakhmanova, 47, is one of the few women in the world who has broken the barrier. She heads the orchestra of the Alisher Navoi Opera and Ballet Theater in Tashkent, capital of Uzbekistan, a Soviet republic in Central Asia.

When Abdurakhmanova's grandmother was a young woman, she risked her life in that same city unveiling her face outside her home. Abdurakhmanova's mother has a vivid memory of the 1920s, which brought women the emancipation accorded by Soviet law. Unprecedented reforms took place in the Soviet East within the lifespan of one generation.

"I was really lucky to be born

Top and facing page: People's Artist of the USSR Dilbar Abdurakhmanova, chief conductor of the Alisher Navoi Opera and Ballet Theater orchestra. Above left: The theater is named after the outstanding fifteenth century Uzbek poet.





well after the October 1917 Revolution, when women had already had a taste of public life and social work," says Abdurakhmanova. "These days no Uzbek would be in the least surprised to meet a woman minister, factory director or collective farm manager."

Her Way to Music

Both of Abdurakhmanova's parents were opera singers who graduated from the Moscow Conservatory Opera Studio in the thirties.

That was an outstanding period in Uzbek music. With a rapid growth in the number of music schools—secondary and higher—all over the republic and the introduction of the study of music theory, Uzbeks began learning to play European instruments.

The Abdurakhmanovs rehearsed everything at home, from Uzbek folk songs to world-famous arias, and their musically gifted daughter memorized everything the first time she heard it. She easily learned to play all folk instruments but attended music school to study the violin. From school she went on to the Tashkent Conservatory.

Her professor, composer Muhtar Ashrafi, who died in 1975, was one of the founding fathers of contemporary Uzbek music. He composed the first Uzbek operas, ballets, musicals, symphonies, cantatas and chamber music. He was also a superb orchestra conductor.

"Ashrafi never forgave even the slightest mistake," Abdurakhmanova recalls. "I used to cry as I sat poring over my homework for hours on end. 'Talent is no more than the foundation,' was his favorite warning. 'To build the walls of your house, you can't stop working for a minute.' "

One day Ashrafi was called away to take an urgent phone call during the rehearsal of a student orchestra. So as not to stop it, the professor passed his baton over to a rather apprehensive Abdurakhmanova: "Keep things going while I'm gone."

It took a little while for the young woman to warm up.

"It was a sudden revelation," she recalls now. "I forgot that I was just substituting for the professor, who would presently come back. With every movement of the baton I felt the delightful cooperation of the orchestra. They understood my interpretation of the music! I was literally conducting my fellow students! I had heard a mistake during a very difficult passage so I demanded that the orchestra repeat it. They did it quite seriously. Nobody smiled, as they ▶



did when I first took up the baton. Finally Professor Ashrafi came back. He gave me an approving glance, but all he said was 'Not bad.' It turned out that he had finished his conversation a while back and had been listening at the door unnoticed. From that day on I studied conducting with him."

After graduation, Abdurakhmanova was accepted by the Navoi Theater as a violinist. Before long she had to go on maternity leave. A substitute violinist could easily be found, but nobody could find as brilliant a conductor. Eight years ago, when her elder daughter was grown, she gave up her work as a violinist to become a full-time conductor.

"She has conducted all our ballets since," says Firudin Safarov, director of the Alisher Navoi Theater. "Her talent sparkles as brilliantly in *Swan Lake* and *Don Quixote* as in *Love Talisman* or *Forty Girls*, based on Uzbek folklore. Without her cooperation, we'd never have been able to stage such sophisticated works as Andrei Petrov's modern opera *Peter the Great* or Rodion Schedrin's renowned ballet *Anna Karenina*."

Safarov makes special mention of Abdurakhmanova's work on *The Storm* by Ashrafi. It is the oldest Uzbek opera. It had not been performed for many years and was revived by the theater.

Reviewers wrote after the sensational opening night that the opera was a tremendous success, much to the credit of the conductor. The house was full, and there were 17 curtain calls.

"If the professor were still alive, he would have been proud of his opera," Abdurakhmanova said after the performance.

She attributes her success to the interpretation of the music she was able to develop, which won over the orchestra, the singers and the audience.

"Sheet music is a kind of shorthand recording," she says. "What we musicians have to do is to breathe life into it. My orchestra consists of excellent musicians. They know right away whether the conductor is just showing off or trying to reveal the composer's message to the audience. The cultural level of the Uzbeks, which has risen so rapidly over the years, also has to be taken into consideration. So it's a challenge to conduct an orchestra now. But I'd never give up the profession—never in my life." ■

The two fulfilled sides of Abdurakhmanova: successful musician (in the conductor's stand, above) and doting grandmother (below). Her young granddaughters dream of following in their grandmother's footsteps. Firudin Safarov is directing a rehearsal (above, center).



THE MAGICAL BIP-BIP OF THE FIRST SPUTNIK

By Andrei Tarasov

The event that is the topic of this article is unique. It ushered in a new era. October 4, 1957, is the day of humankind's first step into outer space. On that day Sputnik I, the first artificial Earth satellite, was put into orbit, demonstrating that it was possible to escape the Earth's gravitation.

Not a single comet, or black hole, or supernova or any other cosmic phenomenon has aroused so much interest among people all over the world as the small stainless steel object that appeared in the sky 27 years ago. It was half a meter in diameter and weighed just 80 kilograms. Only Yuri Gagarin's space flight can compare with this event in the enthusiasm that was generated.

Of course, it will be centuries before outer space is conquered. Future multiplanet civilizations will view the first attempts of humankind to emerge from the Earth's cradle as the timid steps of a baby or the maiden ocean voyage of a homemade boat.

Be this as it may, since that day the Earth has been a berth for spaceships to be launched into boundless space. Hundreds of manned and unmanned space vehicles blast off from the Earth to perform their short-range or long-range missions. If we could see their routes on the celestial sphere, we would see extensive navigation.

From 1957 to 1980 the Soviet Union alone launched 1,522 space vehicles with an over-all mass of 4,572 tons. More than 50 of them were launched toward the Moon, Mars and Venus to gather scientific information firsthand.

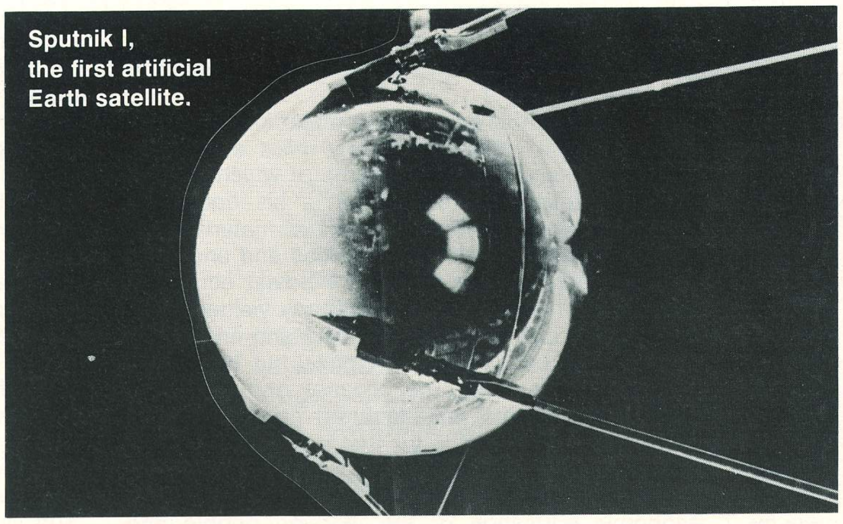
The Russian word "sputnik" immediately became known all over the world, and space exploration for peaceful purposes was put on the agenda. Sputnik I could do little, but its bip-bip signal was touching, coming to Earth, as it did, from the expanses of unexplored space.

We were much less excited by the Lunokhods (Moon rovers), which moved on the lunar surface gathering soil samples to be delivered to Earth by an unmanned spacecraft. The same can be said of the capsule that landed on the surface of Venus to transmit exact data on its atmosphere and a color panorama of the Venusian surface and to carry out a thorough, prompt analysis of the soil. Venus resembles a hot boiler whose pressure is about 100 atmospheres and whose temperature is up to 500 degrees centigrade. Yet highly sensitive devices operated faultlessly in the unknown atmosphere.

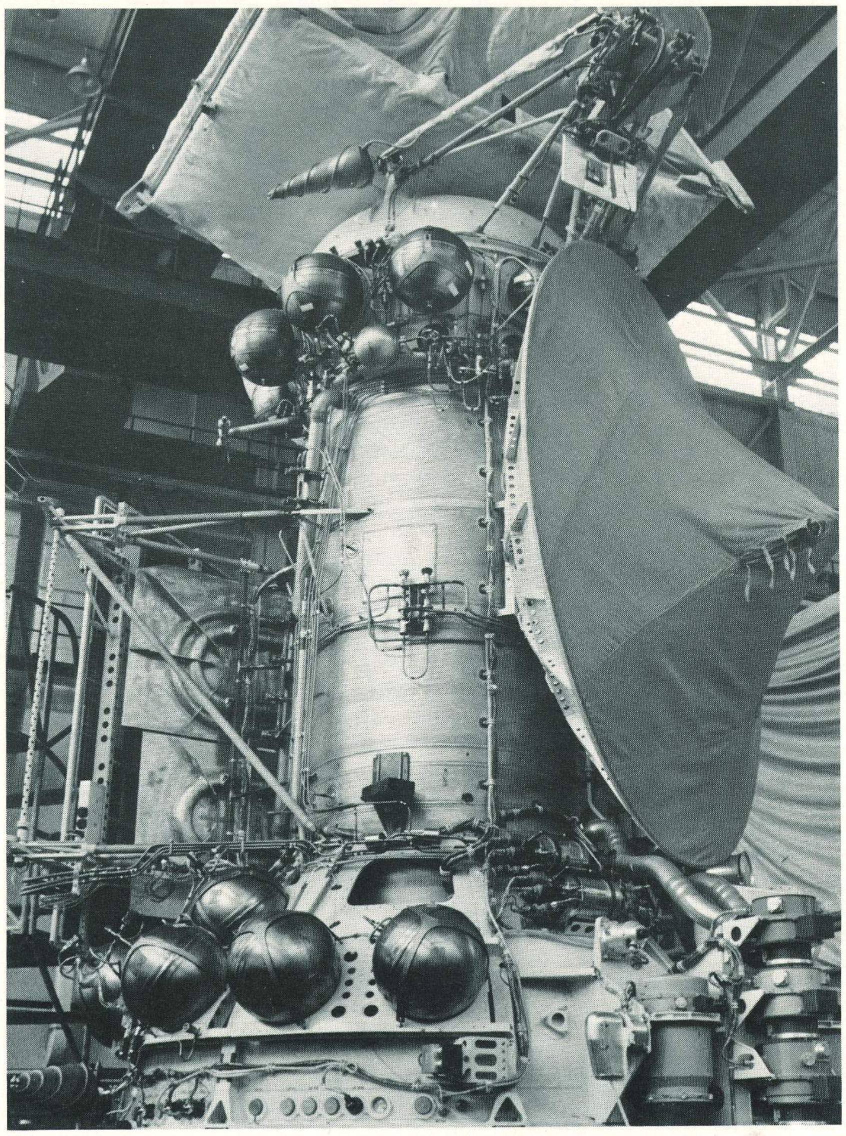
Satellites have proved to be of great use. Hundreds of them studded with electronic devices help us in our everyday life. This has become so usual that we don't even notice it. There are communications satellites; satellites for geophysical research, astronomical studies and geological exploration; navigation satellites; agronomy satellites; weather satellites and biosatellites.

The Soviet Salyut 6 space station uses the MKF-6M multispectral camera, which can take pictures in six spectral ranges. It photographs the condition of fields, forests and waters, and the quality of the atmosphere and the natural environment.

However, no matter how perfect spectral photography can be, according to the Institute of Space Research of the USSR Academy of Sciences, it has an essential drawback. Sometimes you have to wait half a year for a spaceship with its crew to return to Earth in order to process the film obtained and study the information.



Sputnik I, the first artificial Earth satellite.



Model of a probe that transmitted photographs of areas of Venus impossible to observe from Earth.

However, not all data becomes obsolete. For instance, mountains do not change during half a year, and even sand formations will not drift too far. But water, clouds and the vegetative cover are dynamic. They change not during a day, but during an hour. To make prompt economic decisions, almost instantaneous information is needed.

The Meteor-Priroda satellite carries a telecomplex which can take pictures of the Earth's surface and atmosphere in eight spectral zones and simultaneously transmit pictures to Earth. How? On board this satellite visual information is transformed into digital information and is transmitted via a digital radio line to the Receiving and Processing Center. Here it again assumes the form of color or black-and-white pictures. This resembles a mirror at which the Earth is looking, accurately analyzing the physical and chemical details of soil, rocks, water and atmospheric layers.

Not long ago the deciphering of data from Intercosmos satellites, especially the transmission of information to research centers in different countries, took a long time. Now these flying laboratories have been taught a single language, Esperanto.

Intercosmos 21 conducts comprehensive studies of the Earth, ranging from the bioproductivity of the world ocean and the optical properties of the atmosphere to the ice situation in regions beyond the Arctic Circle. The data collection and transmission are universal here too. Buoys and platforms with sensors recording telemetry information are installed in the globe's most inaccessible areas, which scientific expeditions will not be able to reach for decades. They will automatically transmit to the satellite and via it to the Data Processing Center diverse information: weather conditions, seismicity, salt content, humidity, the magnetic and atmospheric situation.

There is a specially designed buoy for the transmission of distress signals. The signal is received by satellites of the international rescue project COSPAS-SARSAT, a space-based system for finding ships and aircraft in distress. This system was described in detail in the April 1984 issue of our magazine.

Earthlings will see a lot of discoveries in the future. Energy and space will be tamed and a factory satellite, a hospital satellite, a health resort satellite, an observatory satellite, a power station satellite and a greenhouse satellite will be launched. It is to be hoped that humankind will experience only these peaceful and constructive projects, that the Earth will remain the peaceful berth of boundless space.

NIKOLAI TIKHONOV: "THE ONLY THING WE NEED IS PEACE"

Vlas Viktorov reviews Nikolai Tikhonov's book *Soviet Economy: Achievements, Problems, Prospects.*

Many statesmen, public figures and business people from various countries who have met the Chairman of the Council of Ministers of the USSR Nikolai Tikhonov have noted his shrewd mind, vast knowledge and realistic approach to solving problems. His book titled *Soviet Economy: Achievements, Problems, Prospects* put out by Novosti Press Agency Publishing House in Russian, English, French, Spanish, German, Portuguese and Italian has confirmed the author's reputation. Writing in his typical style, Nikolai Tikhonov speaks about complicated things in simple and graphic terms, which helps the reader acquire deep insight into the vast Soviet experience of building the economic foundations of a new society. In a sincere manner, another of his qualities, the author analyzes all bottlenecks and unresolved problems.

Nikolai Tikhonov quotes some figures illustrating the Soviet economic advance during the seventies. In the last decade the gross social product grew by 67 per cent in the Soviet Union, with electricity generation increasing by 70 per cent, oil production by 70 per cent and gas production by 120 per cent. The rates of production growth in industry and agriculture were 9 and 2.5 times higher than population growth, respectively. Real per capita incomes went up by about 50 per cent. Over a billion square meters of housing was built, with more than 107 million people moving to new apartments.

At present Soviet industrial output equals that of the whole world in 1950. The way to such spectacular achievements has not been easy. About 20 years of the history of the Soviet state have been wasted on wars imposed on the Soviet people and on rehabilitation of the national economy after devastation in these wars. Referring to the somewhat lower than usual economic growth rates in the USSR over the past few years, Nikolai Tikhonov quotes convincing facts showing that Soviet economic development is quite stable. The USSR has not experienced any slumps in production, unemployment, inflation or other crisis phenomena.

The lower general economic growth rates should be attributed to such factors as a smaller increase in labor resources resulting from a changing demographic situation (a long-term effect of the Second World War); higher costs involved in developing the northeastern areas of the country; growing expenses in environmental protection; poorer harvests during the past four years because of bad weather.

Writing about the most acute problems facing the Soviet national economy during the eighties, Nikolai Tikhonov stresses that in scale, significance and consequences, transition to intensive economic development can be compared with the drastic transformation that took place in the USSR in the not so distant past during socialist industrialization. The Twelfth Five-Year Plan period (1986-1990) will see the breakthrough to intensive development by all sectors of the Soviet economy.

The book explains in detail that the transition to intensive development has been thoroughly prepared for by the earlier economic advance of the country and its scientific and technological achievements. The author analyzes Soviet science and technology at the present stage, placing heavier emphasis on the most important fields, such as electronics, industrial robots, waste-free technologies, labor resources and raw material and energy savings, to name a few.

Now that the levels of economic development have been largely equalized in all 15 republics of the Soviet Union, the issue that looms more prominently than others pertains to achieving a rational distribution of the productive forces throughout the country.

The USSR is the world's only major industrialized country whose national economy relies entirely on domestic natural resources, some of which are exported. Nikolai Tikhonov states in his book that since the cost of producing many raw materials has increased, saving material resources and energy is a very important task facing the Soviet economy. More thrifty management has already yielded good results. The efficiency of using fuel and energy resources has become much higher, but in light of modern requirements, the process of turning primary materials into manufactured goods must be even more efficient. It is for that reason that Soviet society gives its undeviating attention not only to developing new technologies but to improving the economic education of the working people and developing in them a thrifty attitude toward the nation's wealth.

The book dwells extensively on the formation of a cohesive, well-balanced national economy and on economic management. A distinguishing feature of the Eleventh Five-Year Plan period (1981-1985) is that the sector of Group B (consumer goods) is growing faster than Group A (means of production). Described in detail in the book are the measures being taken to boost the output of consumer goods and to improve their quality and variety to meet demand.

State retail prices for consumer goods are fixed in the Soviet Union in a planned manner in accordance with the social significance of each of the products. That is why the prices for necessities, including food, medicines and children's clothing and footwear, are low. During the period from 1970 to 1982 retail prices grew by only eight per cent in the Soviet Union.

The book also focuses on the development of the agro-industrial complex and the implementation of the Food Program for the period to the year 1990. According to estimates of the Food and Agricultural Organization (FAO) of the UN, the per capita consumption of food in the Soviet Union corresponds to the average standards for the world's most developed nations. The optimal calorific content of the people's daily diet has been ensured because of faster growth in agricultural production. From 1965 to 1980 the population of the Soviet Union grew by 15 per cent, whereas the average annual gross output of agriculture increased by 50 per cent. The goal of the Food Program is to improve the nutritional pattern of all Soviet people by boosting the consumption of meat, milk, vegetables and fruit.

Changing the national economy in a way that will raise the living standards of the people indicates that Soviet economic plans are peaceful, the author stresses.

Nikolai Tikhonov also analyzes the material guarantees of human rights. The Soviet people do not know what unemployment is or the antagonism of poverty and richness or what it is like for life to be governed by social origin. The ongoing improvement in the lifestyle of the people, in their working and living conditions and recreational facilities is not only the most humane but also the most efficient way to develop the productive forces. At the present time, Nikolai Tikhonov states, the accumulation of knowledge, education and health by people, their creative activities, environmental issues, and so on, play a major role in the economic and social progress of the nation.

The author also deals in detail with environmental issues. Solving international environmental problems, he maintains, just as resolving global economic problems, depends on the triumph of peace and disarmament.

The Soviet people, he writes, are striving to build a society in which people would be able to feel in a more complete way that they are happy. Everyone interprets happiness in his or her own way. But its components, such as a peaceful life, a job, health and creative activity, are common to all.

"We do not idealize our society; we have quite a few difficulties and unresolved problems. We are well aware of that, and we are making strenuous efforts to improve living standards for one and all. We have everything necessary for that. The only thing we need, as much as we need air, water and Sun, is peace. The preservation of peace is today essential for solving all problems—personal, national and international."

In the concluding chapters of the book Nikolai Tikhonov deals with international economic relations. Economic cooperation between the USSR and other nations is expected to achieve two closely linked goals: to promote our country's foreign policy of peace and to use more efficiently all of the advantages of the international division of labor for the benefit of the national economy. At the present time the Soviet Union maintains commercial and economic relations with 143 foreign countries, and it is always striving to make these relations more wide-ranging, long term and significant.

The most progressive forms of international cooperation, including long-term, goal-oriented programs, are used within the framework of the Council for Mutual Economic Assistance. The author explains how all problems related to cooperation are tackled by the CMEA countries collectively, combining in the best possible manner the interests of each country and those of the socialist community as a whole.

Aware of its international responsibility, the Soviet Union helps, as far as possible, the developing countries to boost their industry and agriculture, train their labor force and strengthen the public sector of their national economies, particularly the main branches.

"The policy of the Soviet Union rules out any attempts to use economic cooperation for imposing its will on any other country or to seek advantages for itself in the economic difficulties other states are experiencing. This is incompatible with the principles of USSR foreign policy and with the interests of peace, international security and the strengthening of friendly relations," writes Nikolai Tikhonov.

The author also maintains that constructive development of international economic relations has always been an alternative to tensions and a method for building confidence among states.

The policy of the Soviet Government to seek and use new opportunities for promoting economic relations with foreign countries is invariable and consistent. It is one of the chief avenues of work in the cause of détente.

The book by the Chairman of the USSR Council of Ministers Nikolai Tikhonov is one more piece of convincing evidence that the Soviet people have centered their efforts on two closely related issues: building a comprehensively developed society and strengthening peace. ■

MIKHAIL LERMONTOV
THE GREAT POET'S 170TH BIRTHDAY

By Irakli Andronnikov
Soviet Writer, Literary Critic
and Lermontov Scholar

If Lermontov had not become a great writer, he would have become a great artist. Few poets in world literature died as young as he. He was killed in a duel before his twenty-seventh birthday.



This self-portrait water color is one of Lermontov's best works. He depicted himself with the Caucasus Mountains in the background in the uniform of the regiment to which he had been exiled.

Tiflis
oil on cardboard, 1837.
32.2 x 39.5

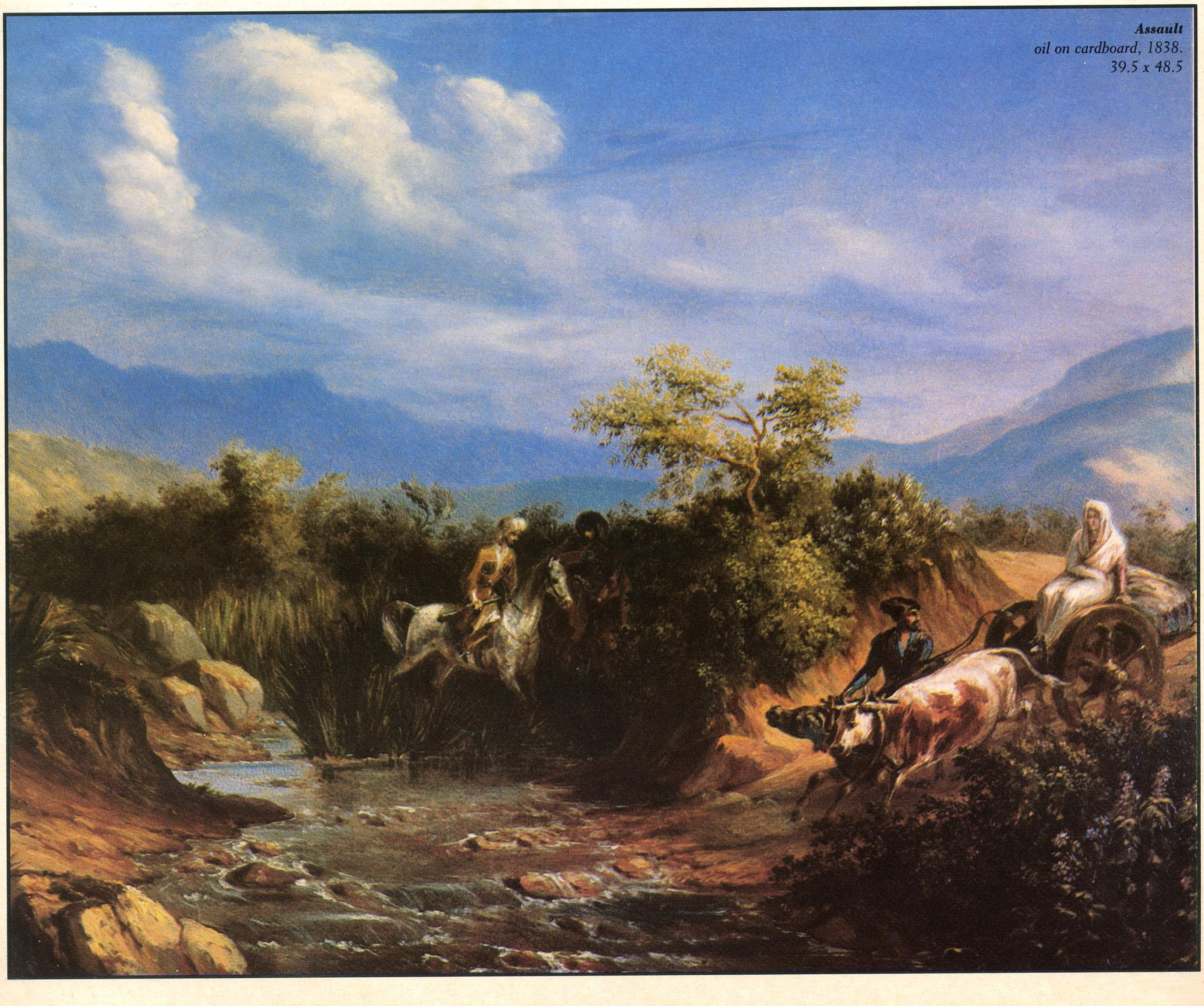




Alexei Stolypin in Kurdish Costume
water color on paper, 1840.
13.2 x 9.4



Cover for the manuscript of *Vadim.* 1832-1834.



Assault
oil on cardboard, 1838.
39.5 x 48.5

When Lermontov put on his officer's uniform for the first time, his grandmother commissioned an artist to paint a full-length portrait of her grandson. The canvas presents a good-looking guardsman with regular features: a longish face, a fine forehead, austere brown eyes, well-shaped nose and a foppish mustache above a full mouth. How can this canvas be explained when other portraits show Lermontov with irregular features, a narrow chin and a short, somewhat turned up nose?

His character, and not just his appearance, is described by his contemporaries in so many ways that it seems, at times, they are talking about different Lermontovs. To some he seemed cold, peevish and irritable; others were impressed by his gaiety and energy.

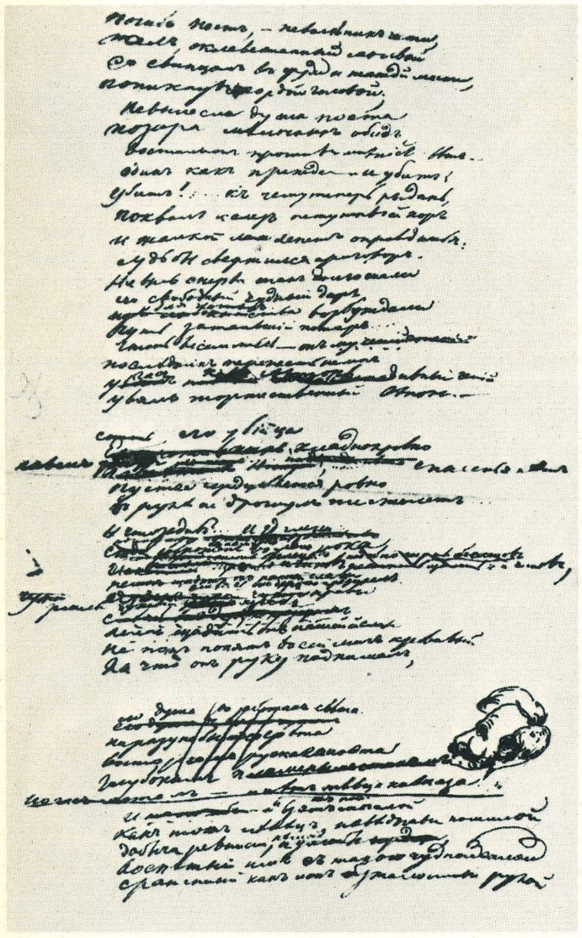
Lermontov indeed had conflicting personal qualities. He acted one way among the aristocratic society so hostile to him and another in the circle of his close friends. He was not the same person in public and in solitude, in battle and in Petersburg drawing rooms, at moments of poetic inspiration and in the din of his carousing with hussars. The facets of the poet's character were distinctly outlined. Few people have aroused as many contradictory impressions.

However, the books that contain Lermontov's true portrait, the most profound and accurate characterization of him, are the poet's works. In these he is reflected as he was in reality, as he wanted to be.

Mikhail Lermontov was born in Moscow on October 15, 1814. His mother died when he was only three, and until he turned 13 he was brought up on the rich estate of his grandmother in Tarkhany, Central Russia. In 1830 he enrolled in the Literature Department of Moscow University, but he was expelled after clashing with a reactionary professor. He then went to St. Petersburg to enter the cadet school which he gave up two years later to join the Life-Guard Hussar Regiment. These are the bare facts of his short life.



Illustration for Alexander Bestuzhev-Marlinsky's novella *Ammalat-Bek*. Lermontov did several illustrations for the popular book by his contemporary.



A rough draft of Lermontov's poem "Death of the Poet," written after Pushkin's death. On the margin is a profile of Leonti Dubelt, chief of police.

Let's take a deeper look. During his student years Lermontov mastered the best of what had been accumulated by Russian and European culture: poetry, prose, drama, music, painting, history and philosophy. He was fluent in French, English and German, he could read Latin, and later, in the Caucasus, he began to study Azerbaijanian. When he was in Georgia, he kept a record of Georgian words and gave one of his poems the Georgian name of *Mtsyri*. Two authors—Byron and Pushkin—stand out in the wide range of authors he enjoyed reading. In his childhood he copied their verses in his notebook, and he looked up to Pushkin all his life.

Lermontov was a talented musician. He played the violin and the piano and composed music to his own poetry. He perceived the world dynamically, graphically and colorfully. In this the poet was assisted by his artist's eye. He loved to draw grim profiles and horses chafing at the bit.

The Only Book

Lermontov began to write at the age of 14. He very soon stopped imitating other writers and learned to draw on his own experience. The pages of his youthful notebooks resemble a diary in verse form, full of his thoughts about life and death, eternity, good and evil, the meaning of life and love, the future and the past. However he waited for a long time before submitting his work for publication. His first published work, *The Masquerade*, a drama in verse form, came out in 1835.

From an early age Lermontov associated the society he was connected with by birth and upbringing with everything false, insensitive, cruel and hypocritical. The title *The Masquerade* has an ironical meaning. The characters of the play had masks for faces. Unidentified, they bared their evil passions and vices. The young man who had just turned 21 had the courage to say everything he thought of them. Lermontov's sharp and apt portrayal of fashionable society gossips angered the czarist censors, and the play was banned.

Lermontov had been writing poetry and prose for 10 years before he ventured to call himself a real writer. It took him another three years to publish a small collection of the best things he had written. He was surprisingly demanding and exacting of himself. No writer had ever come out with *such* a collection as a first work.

This small book contained almost everything: a passionate plea for happiness, the bitterness of separation from the land of his birth, cold despair, a tender conversation with his beloved, a violent threat to the aristocratic rabble, a call to struggle for liberation from slavery. It was the first and last book published in the poet's lifetime.

Lermontov's style was tempered by the rich and hard experience of his life, a broad world outlook and what might be called "responsibility to the reader." Many of his poems have become folk songs. Their simplicity matches the depth of their content. They touch a responsive chord in young and old alike, who perceive them as a melodious form of folk speech.

Lermontov's words are still alive, and so is his world of feelings. His most sagacious contemporaries compared him to Byron and called him the "Russian Goethe," thus putting him in the league of the greatest nineteenth century poets.

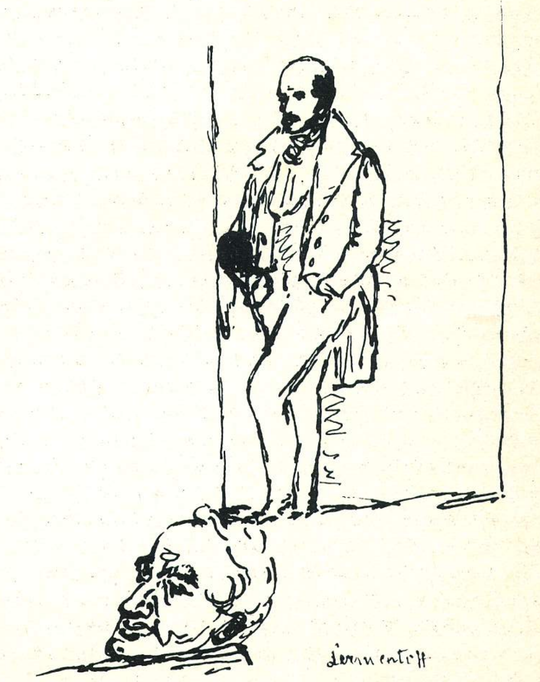
His poems have been translated into foreign languages. His poem *Demon* and novel *A Hero of Our Time* were received with unparalleled enthusiasm by Russian readers. The latter was the first psychological novel in Russian literature. It marked the beginning of the psychological Russian school which has for over a hundred years been exerting a powerful influence on world literature.

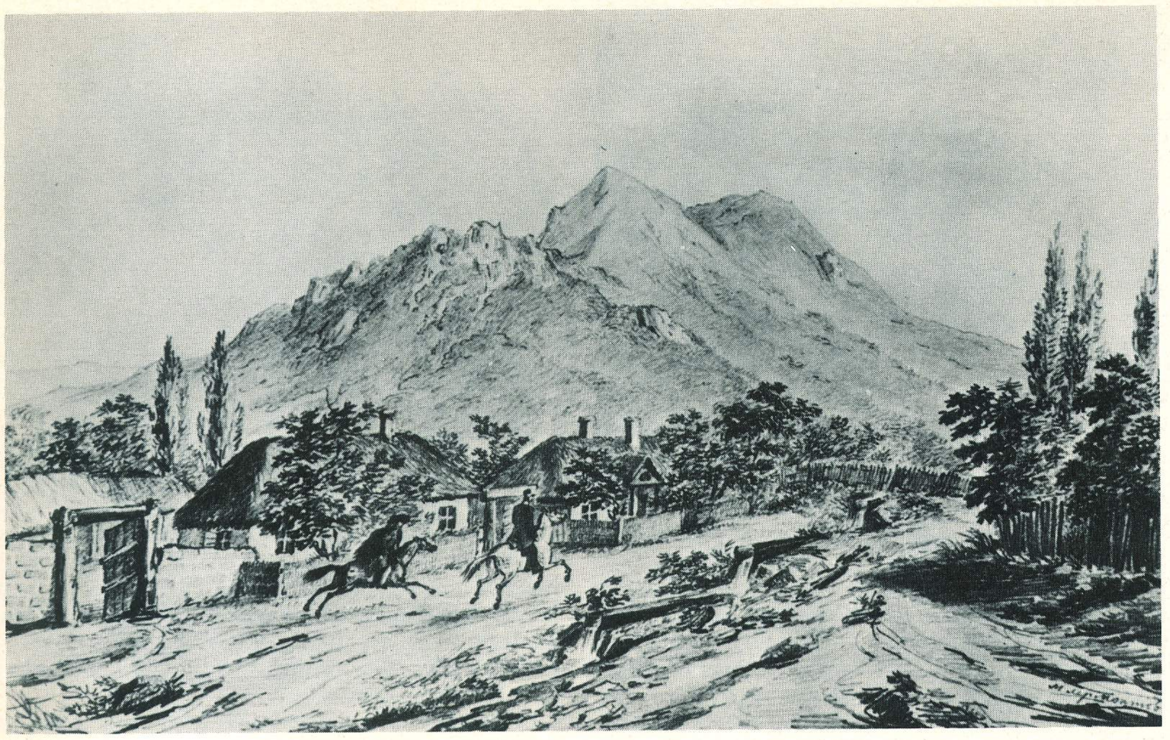
"Impermissible Poems"

It was not only Lermontov's inner maturity that accounted for the recognition of his genius. He addressed his contemporaries, confronting them with "the destiny and rights of the human personality." All Russia could now hear his voice. The greater his popularity grew, the faster he matured as a poet and novelist. Lermontov's name is forever linked in the minds of Russian society with the name of Pushkin. On the day Pushkin was killed in a duel incited by the nobility in St. Petersburg, the poem "Death of the Poet," signed by Lermontov, appeared in handwritten copies.

The poem had a staggering effect on the whole country. The author exposed the secret plot against Pushkin, pointing to the court aristocracy that had ▶

Fragment of a sketch from Alexandra Vereshchagina's autograph book. India ink on paper. In the Columbia University Library in the United States.





The Beshtau Mountain
pencil on paper, 1837.
17.5 x 27.3

planned the murder, predicting that history would pass stern judgment on them. Lermontov called just punishment "God's judgment," but the real meaning of the threat was quite clear. Interestingly enough, one of the copies that survives to this day bears the inscription: "Call for Revolution."

A case against "impermissible poems" was concocted, followed after several days by the order that Mikhail Lermontov, an officer of the Imperial Guard, shall be sent on "an expedition against the local tribes." The poet spent the rest of 1837 in exile in the Caucasus.

Incapable of concealing his feelings, he remained credulous and careless. The poisonous slander of people whom he considered his friends was more painful to him than the open malice of his enemies. A feeling of loneliness in the kingdom of arbitrariness and darkness, as Alexander Herzen, the revolutionary writer, called Nicholas' empire, inevitably imparted a tragic character to his poetry. Nor had the poet's own destiny been too happy: his mother's early death, separation from his father, the tortures of unrequited love, political persecution, banishment from the capital during his last years. But he never became a morose negator of life, which he passionately loved. He was inspired by his country, dreams of freedom and a craving for action.

Just Four Years

The older the poet grew, the more his experiences and feelings reflected the experience and destiny of his generation. His world of romantic dreams gradually gave way to an objective depiction of reality. Lermontov's poetry more and more portrayed the everyday life of the 1830s and 1840s and the contradiction of profound progressive interests on the one hand and spiritual stagnation in social life on the other.

Lermontov embarked on his career at a time sparkling with talent. His fame, sudden and resounding, was the incarnation of a challenge to society, so apparent in the last lines of "Death of the Poet." This poem voiced a public protest. His fame embodied two events which became political phenomena—the death of one poet and the powerful emergence of another, who was destined to become Pushkin's successor in orphaned Russian literature.

World literature does not know many such tragedies and such a glorious relay. It is a tribute to the great power of a people capable of providing one genius to replace another.

Lermontov outlived Pushkin by just four years. But in those years he created the best part of his legacy.

He brought back from his place of exile *A Song About Tsar Ivan Vasilyevitch, His Young Body-Guard* and the Valiant Merchant Kalashnikov*. In this poem written in folk ballad style, Lermontov exalted the common man: Stepan Kalashnikov, defending his wife's honor, began a fist fight with the czar's favorite, and after killing him, would not submit to the czar. It was a very bold idea. Lermontov sang the praises of a man who did not submit to the monarch at a time when the czarist gendarmes were persecuting and killing Russia's best sons with impunity.

A Song, published without the name of the disgraced author, enjoyed great popularity. Vissarion Belinsky, an outstanding literary critic of that time, with farsightedness wrote, "We are not afraid of being branded false prophets when we say that our literature has acquired a powerful and original talent."

The Lermontov writings during the four years between 1837 and 1841 are different both in form and content. His poem *Mtsyri* is a passionate dream of freedom, of the lost land of one's birth. The dramatic poem *Demon*, the result of the poet's long years of philosophical meditation, is filled with his views on the right to think, live and create freely. The great god-fighting Demon rises against the Almighty, against unjust laws and slavery on Earth.

*Russian Czar Ivan the Fourth (1530-1584), called Ivan the Terrible. Ivan established his body guard (*oprichnina*) to fight treachery among the feudal lords.

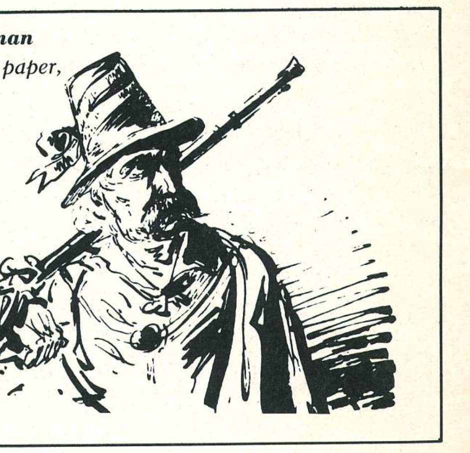
Pechorin, the protagonist of *A Hero of Our Time*, belongs to the privileged class, but he despises it. He languishes in the emptiness of his life, avidly aspiring to catch the alluring phantom of happiness. Lermontov showed with bitterness that his talented, clever contemporary is morally perishing from the lack of freedom, from the impossibility of finding a real cause.

The social importance of Lermontov's poetry and his ever-increasing fame irritated the aristocracy. They used the tried and tested method of provoking a duel to get rid of him. Nobody was hurt, but it was used as a pretext to have the poet court-martialed. In 1840 he was again sent into exile in the Causasus, and this time he was destined not to return alive.

Lermontov's second duel, which took place on July 27, 1841, in Pyatigorsk, was a well-planned and subtly conceived murder whose threads led to the czar's residence in St. Petersburg.

Everything that Lermontov created was created by a man who did not live to reach maturity. But all of his works (except for the earliest ones), with their richness of content, splendor and variety of form, bear the imprint of maturity of thought and feeling. His creativity promoted a new epoch in Russian literature. There has been no writer in Russia who has not been influenced by Lermontov's poetry—from Leo Tolstoy, Ivan Turgenev and Fyodor Dostoyevsky to Vladimir Mayakovsky and present-day poets and novelists.

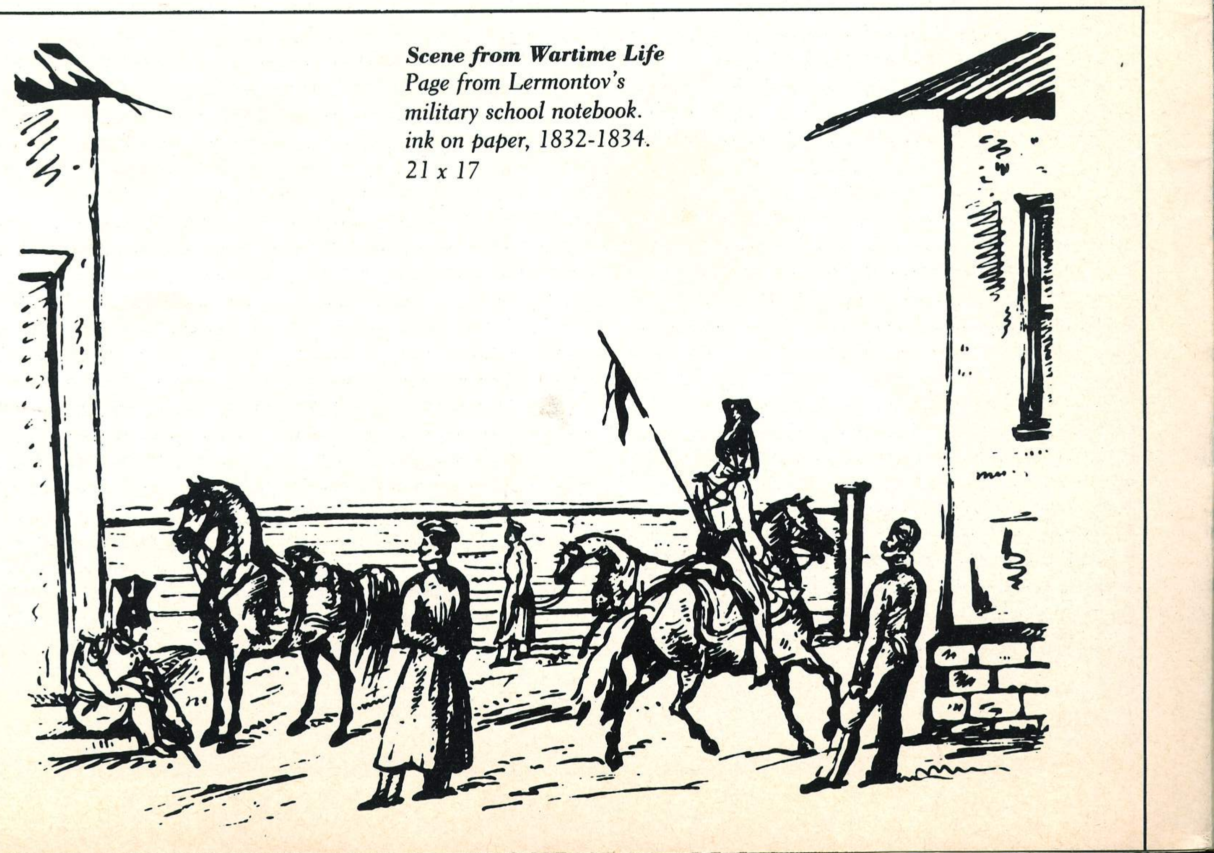
The Marksman
India ink on paper,
1835-1838.
21 x 26.5



Great humaneness, a combination of simplicity and sublimity, naturalness and originality are what stand out in Lermontov's works and in the poet himself.

We, his grateful descendants, cherish in our hearts the image of the man—exacting, sad, delicate, imperious, modest, brave, noble, biting, dreamy, sarcastic and shy—who was endowed with mighty passions, a strong will and a shrewd and vigorous mind. ■

Scene from Wartime Life
Page from Lermontov's
military school notebook.
ink on paper, 1832-1834.
21 x 17



THREE HOURS AND THIRTY-FIVE MINUTES IN THE LIFE OF COSMONAUT SVETLANA SAVITSKAYA

The first step is always the hardest. In Svetlana Savitskaya's life there were many first steps: when she made the first parachute jump, when she piloted her first plane and when she made her first space flight. On July 26 Svetlana Savitskaya became the first woman to walk in space. She and Vladimir Dzhanibekov tested a multipurpose tool designed for carrying out complicated technological operations.

Preparations for extravehicular activities passed through several stages. First Savitskaya and Dzhanibekov put on heavy spacesuits in the transfer compartment of the Salyut 7 Station and checked their seal. Then they opened the external hatch and left the station.

"The sunshine is so strong, it hurts my eyes," Savitskaya commented on her first encounter with the space abyss. I didn't notice any specific emotions, only the fact that her phrases were somewhat protracted and showed that she was agitated. Vladimir Dzhanibekov switched on his television camera. Savitskaya with a welding torch in her hands appeared on a big screen. The torch is a portable electron beam device which makes it possible to carry out the cutting, welding and soldering of metallic plates and also to apply coatings on other metals.

Savitskaya carried out all the planned operations, one by one, commented on what she was doing and consulted with experts on Earth. Somewhere in the middle of the work, a joke and laughter were heard. This was a sure sign that she had adapted to the unusual situation.

When the work was finished, the welding device and the samples were transferred to Salyut 7.

A lot is being said and written now about the approaching era of extensive space construction, when the large aerials of radio telescopes and solar energy fields for supplying orbital plants and other objects with electric energy will be assembled in space. Such assembly operations will need instruments similar to the device tested by Savitskaya.

The total time of her space walk came to three hours and thirty-five minutes.

A woman can work on a par with men not only on Earth, but in open space as well. That was only a hypothesis prior to July 1984. Svetlana Savitskaya has made it a fact. ■

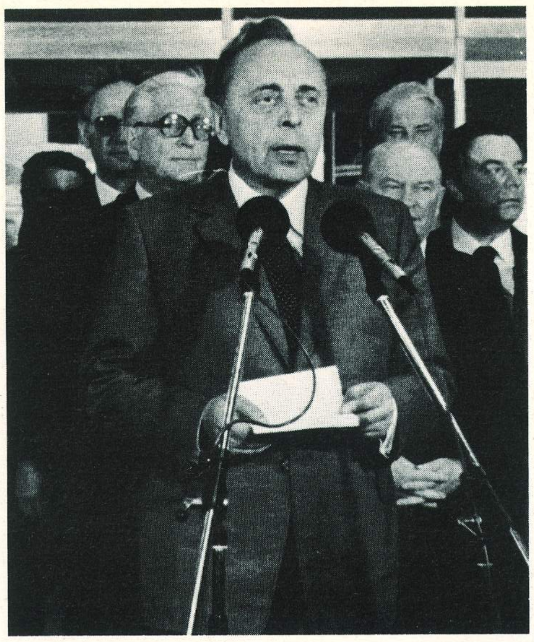
Svetlana Savitskaya answers the questions asked by journalists at a press conference after her flight.



IN FOCUS: PUBLIC HEALTH

Soviet medicine attacks diseases with the help of discoveries made in physics, biology, cybernetics and outer space. It is possible that cancer and cardiovascular diseases will soon be defeated. But it is much easier to prevent an illness than to cure one. That is why prevention is one of the cornerstones of our health system, which offers highly qualified medical care free of charge. Read about Soviet public health on the following pages.

OUR MAJOR AIM: REGULAR CHECKUPS



Every year the USSR Ministry of Health receives hundreds of letters from people in various countries asking for medical assistance. Hoping to be cured of serious conditions and unable to get help at home, they are prepared to take a long trip to the Soviet Union to be treated by Soviet specialists.

Why is this so? Part of the reason must be that there is no charge for medical treatment in the USSR.

The following is what a patient pays for medical and other services during a stay in a Soviet hospital:

Room	**free**
Surgeon	**free**
Anesthesia	**free**
Blood	**free**
Intensive Care	**free**
Operating Room	**free**
Drugs	**free**
X-rays	**free**
Medical supplies	**free**
Laboratory services	**free**

This is an interview which Sergei Burenkov, Minister of Health of the USSR, gave to journalist Mark Mirsky.

Regardless of where Soviet citizens live, the Minister said, in the densely populated Ukraine or in sparsely populated Yakutia, in warm Turkmenia or in the severe climate of Karelia, in town or countryside, in a big industrial center or a small village, they can always call a doctor and get qualified medical care free of charge. Medical assistance is available to everyone.

This doesn't mean that medical care doesn't cost a lot here. It does, but expenses involved in protecting the health of every Soviet citizen are borne by the state. It maintains all medical facilities: hospitals, polyclinics, outpatient departments, special clinics, maternity homes, and sanitary and epidemiological stations. It also finances the extensive network of research centers, institutes and laboratories, and the training of doctors, feldshers, obstetricians, laboratory assistants and nurses. More than 66 billion rubles was allocated in the State Budget for health services and physical and sports activities under the Tenth Five-Year Plan alone (1976-1980).

Mirsky: The achievements of Soviet medicine are known the world over. But not everyone knows how the health-care system is organized. Could you tell us something about it?

Burenkov: The Soviet health network consists of thousands of hospitals and clinics with a total of 3.5 million beds (128.5 beds per 10,000 people); more than 36,000 polyclinics and outpatient departments (2.9 billion visits to doctors a year); first-aid stations which annually take care of almost 90 million victims of diseases and accidents; hundreds of research institutes and centers, and higher and secondary medical schools functioning in all union and autonomous republics and in the capitals of various regions and territories. As for medical personnel, there are 1.1 million doctors (a quarter of the world's total) and more than three million feldshers, obstetricians, laboratory assistants and nurses.

Every day Soviet doctors see almost 10 million patients in polyclinics, tend to 3.3 million patients in hospitals and clinics, respond to more than 200,000 emergency calls, perform over 20,000 operations, give assistance to 14,000 women in childbirth and carry out close to four million biochemical, X-ray and other analyses for diagnostic or preventive purposes.

Hospitals consume the largest share of state health allocations—about two-thirds of the total sum. The steady growth of these allocations enables us to build large hospitals (with 500, 1,000 and more beds) which treat many diseases, and set up specialized centers and departments equipped with sophisticated and expensive technology. The most advanced anesthesia and respiratory techniques, for example, can now be found at all surgical and intensive-care departments in hospitals. Modern facilities also include monitoring patient-control systems and X-ray installations supplied with electronic optical amplifiers.

The emergency medical service has its own medical aircraft which take care of patients in areas that are remote or difficult to reach.

Altogether, the emergency service comprises some 2,500 specialized teams—pediatric, cardiological, traumatological and shock-control. They reach patients by special cars equipped with diagnostic and therapeutic equipment, enabling them to provide effective assistance on the spot and en route to the hospital.

Mirsky: Even in the old days doctors maintained that it is far easier to prevent a disease than to cure it. The famous nineteenth century Russian surgeon Nikolai Pirogov wrote prophetically that the future belongs to preventive medicine. And it has indeed become one of the basic principles in the Soviet medical system. What factors facilitate the Soviet doctors' work in preventing disease?

Burenkov: Above all, the state's social policy. The people's "health potential" grows along with improvement in their working and living conditions, their general welfare and their cultural standards.

Each and every republic, region, district and town in the country has its own sanitary and epidemiological facility staffed with specialists responsible for preventive medicine and routine sanitary control. Experts in housing and municipal sanitation, for example, keep an eye on the sanitary conditions of the populated areas, the water supply and sewage systems, and the purity of water, air and the soil. The food hygiene services are responsible for the maintenance of sanitary conditions in restaurants, in the food industry and in food stores and markets. All questions relating to the health and physical development of children and teenagers in kindergartens, general vocational and specialized secondary schools are the province of doctors who specialize in hygiene and who are responsible for this particular segment of the population. There are also special sanitation doctors whose job it is to look after the sanitary conditions in factories, to see that working conditions are improved and occupational diseases prevented.

Preventive inoculation with special vaccines is done throughout the country, in towns and villages alike (tens of millions of children are vaccinated every year against poliomyelitis, whooping cough and diphtheria). People with a contagious disease that has been diagnosed in good time are hospitalized, and the areas they have contaminated are thoroughly disinfected. This has helped wipe out such dangerous diseases in our country as plague, cholera, smallpox, malaria, poliomyelitis, diphtheria and trachoma, and to drastically reduce the number of other diseases (many of them have been eliminated as widespread diseases).

Mirsky: The party and government have recently emphasized that special attention must be paid to disease prevention, including annual medical checkups for the entire Soviet population. Would you comment on this, please?

Burenkov: Our health-protection system has been set a task of great state importance—to ensure that all Soviet people have a physical checkup every year. This marks the beginning of a new stage in Soviet health services. The increase in labor productivity over and above the plan and the additional lowering of the cost of production have provided us with funds that are channeled into improving the people's working and living conditions and their health care.

Mirsky: But there is nothing particularly new about such screening. We've been doing it since the Revolution. In the twenties we used this method to control tuberculosis. Soviet doctors even then did everything necessary to find people suffering from TB, treat them and keep them under constant observation. Has anything new been added now?

Burenkov: Until recently such mass-scale medical examinations were the principal method used by specialized clinics—cardiological, oncological, TB, venereal, physical, physical therapy and other clinics. As time went by, the scale of the work increased: More than 53 million people were examined in 1982, compared with some 21 million in 1970.

Regular medical checkups of the entire population will be carried out in keeping with a uniform program and will, when necessary, be followed up by treatment and observation.

We have already accumulated a lot of experience in this field. For example, the currently practiced periodic examinations of separate groups of the population are, in fact, a form of screening healthy people—children during the first 12 months of their life, preschool children, vocational school students, teenagers, pregnant women, invalids and veterans of World War II, as well as workers in many branches of industry, farmers, students at higher and specialized secondary schools and colleges—a total of more than 115 million people.

All this is, essentially speaking, the initial stage in the work of screening healthy people. In the future we are planning to do the work in two stages. Gradually, the number of specialists involved in this work will increase, and the scope of diagnostic examinations (in laboratories with special equipment) will expand. All kinds of automatic and semiautomatic apparatus and computerized systems will be widely employed.

At the end of the annual checkup, a clinical assessment of each person's health will be made. Naturally, these checkups will be free.

Mirsky: It seems to me that if we try to medically screen the entire population, we'll have to pay more attention to health education, to popularizing healthy ways of living so that everyone will know how to take care of their own and other people's health. Do you agree?

Burenkov: Yes, of course, that is indispensable. No hospital or special clinic can ever substitute for a person's sensitivity to his or her own health.

Health, that wonderful gift of nature, is dependent on many factors. Not everyone is born healthy, but everyone can and must build up and preserve their health.

Courtesy of *Moscow News*

HEALTH CENTER IN THE BALTIC



The personnel of the Panevezys Association often spend weekends and holidays in the comfortable cottages of their health center, which is located in the countryside not far from the plant.

Summer is the time for vacations. That means seeing new places or resting or getting into better shape physically. People usually think about how they'll spend their summer while it's still winter so that they can get all the preliminaries settled. Some of them like sunshine and water, others prefer the forest or the mountains. Still others want to get some specialized therapy.

There is no doubt that the people working at the Panevezys Building Association, in the town of Panevezys in Lithuania, a Baltic republic, have a definite advantage. They don't have to use precious vacation time to get treatment at a health resort because their enterprise has its own health center.

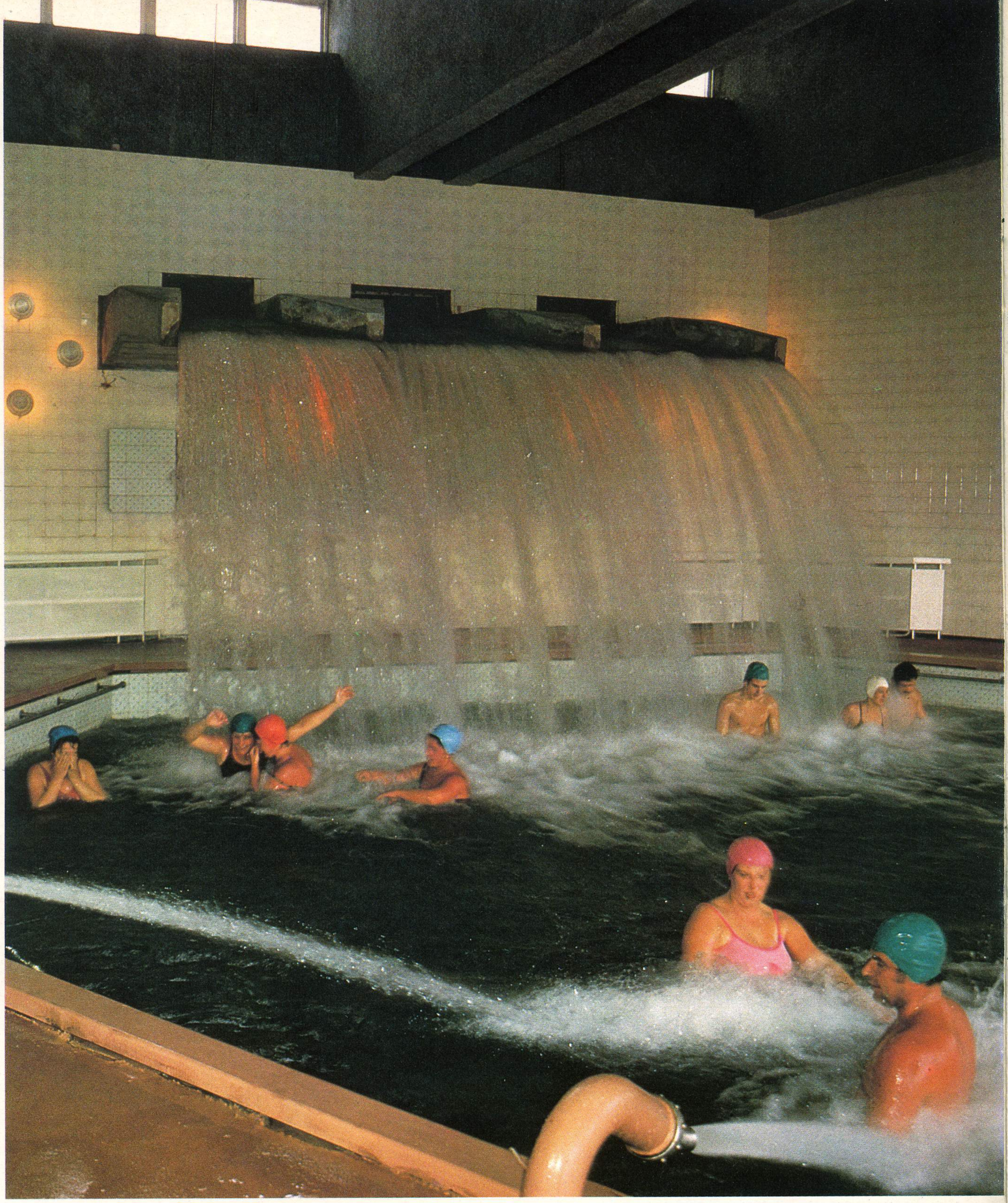
In general, health centers are becoming quite the fashion these days, and practically every enterprise or research institute already has a center or is planning to build one. They have many things to recommend them, not the least of which is that people can visit the facilities either during or after the working day and it does not intrude on their vacation time.

After the working day is over, there is a bus waiting at the door of the factory or office to take workers who are to be treated out of town to pleasant cottages surrounded by trees and flowers. There are tennis courts and courts for basketball and volleyball, pleasant places for walking and facilities for fishing.

The center can provide treatment for about 30 different ailments. Most people require 24 evenings after working hours. After the medical treatment, they can enjoy their favorite pastime. In the morning the same bus takes them back to work.

The trade union local, in this case the one at the Panevezys Association, pays for the treatment of its members. More than a third of the accommodations at the health center are distributed free of charge while the rest are provided at a 70 per cent discount. The cost would be a little over 20 rubles.

The center is open year round. It has an excellent swimming pool, and quartz lamps substitute for the Sun's rays, so that people who love water and sunshine can enjoy them even in the wintertime and the rainy days of autumn. ■





After treatment and dinner, the patients are free to enjoy a swim, a stroll or tea and talk in the café. For the more energetic, there are basketball and volleyball courts and places to fish. The cost for treatment and recreation is nominal and often completely free.

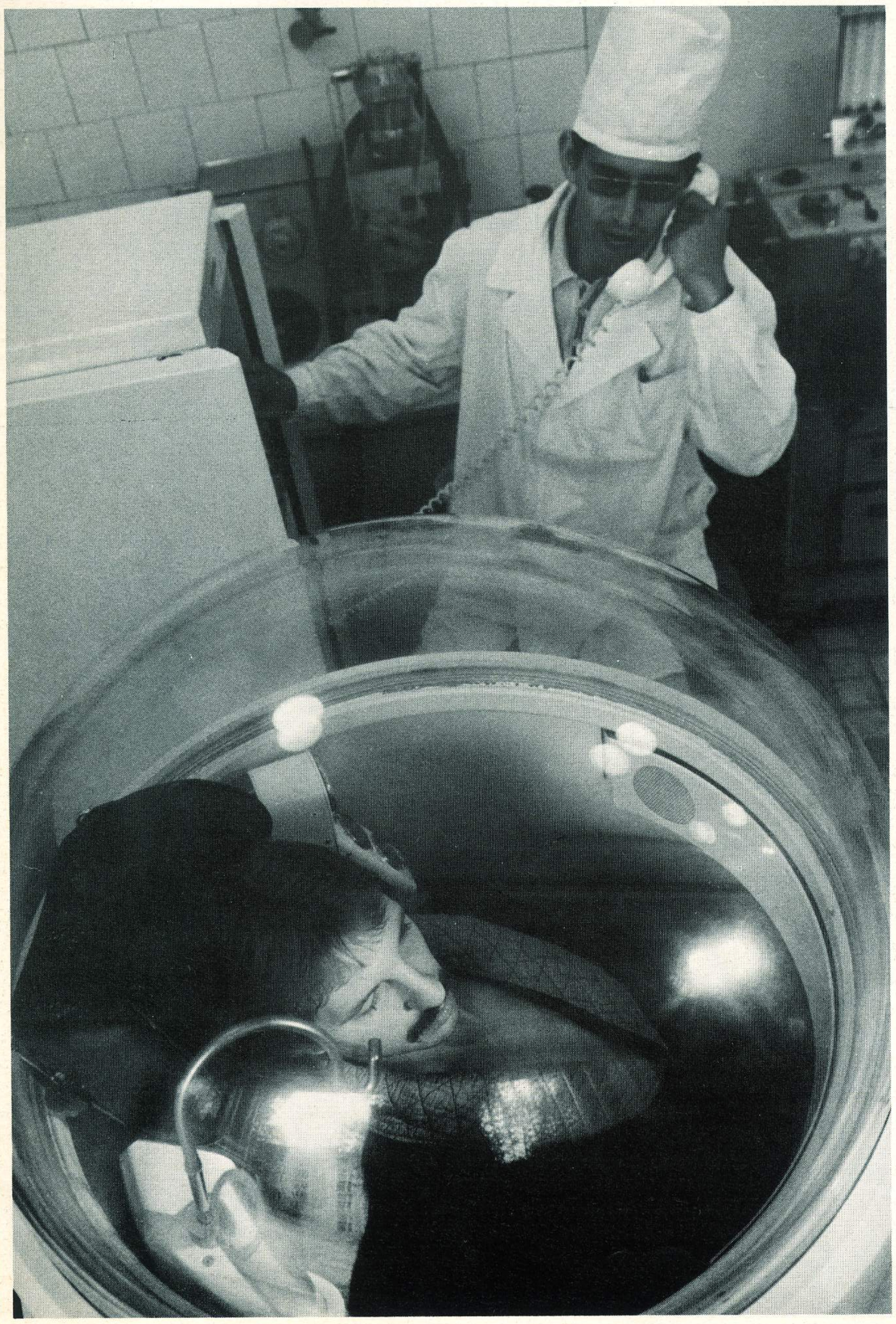
Preventive care is one of the main principles of Soviet medicine.

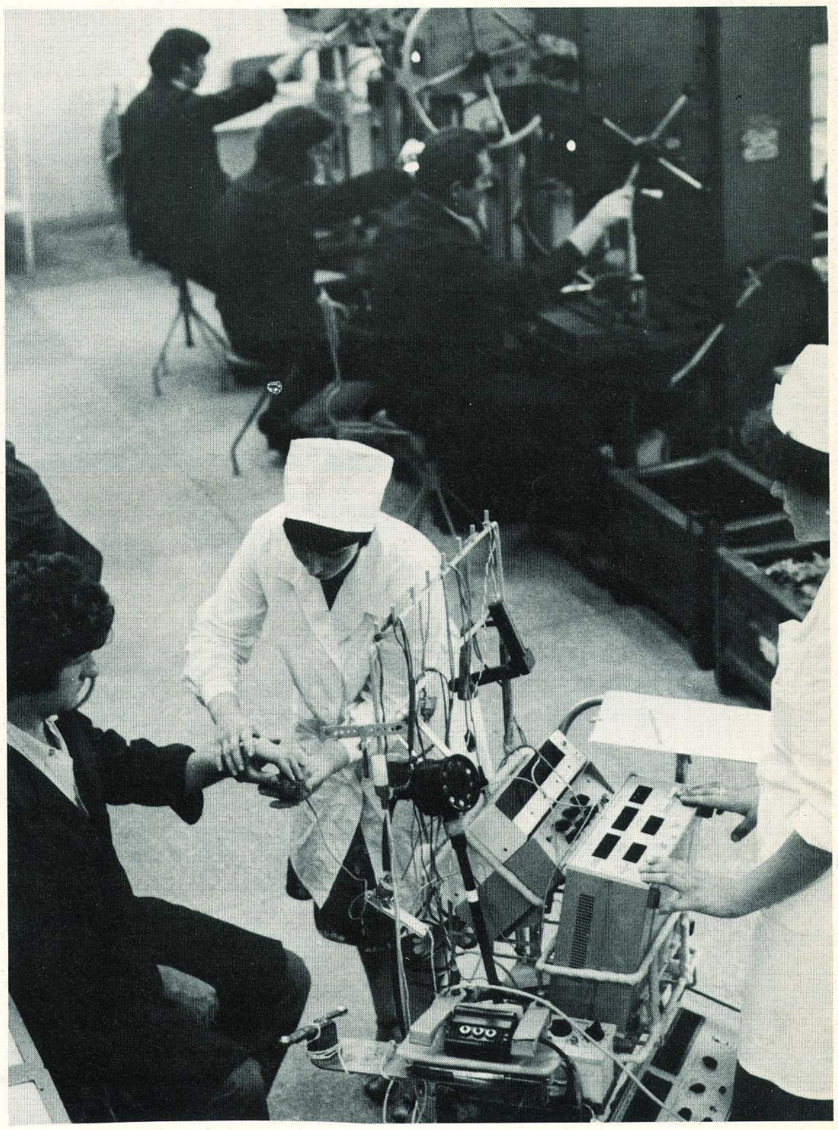




HEALTHY PEOPLE'S HEALTH

By Yuri Nemtsov
Photographs by Yuri Abramochkin





Top right: The new medical center of the Gorky Auto Plant. Above: From time to time a mobile unit tests the workers for symptoms that precede the outbreak of occupational diseases. Forewarned, the physicians can get to work preventing them. Left: A pressure chamber that relieves assembly-line fatigue. Top left: Doctors and nurses make the rounds of the shops twice a day to inspect the health, safety and working conditions of the personnel of the plant.

Below: Any workers who need it can get a free voucher to the plant's preventive treatment center in the countryside. After the treatment recommended by the doctor, they can relax there with relatives and friends. Bottom: In the center's physical therapy department.





One day of sick leave for one worker of the Gorky Auto Plant costs its management 85 rubles. Multiply this figure by 100 for the whole plant. That is why (apart from purely humanitarian reasons, of course) the Gorky Plant has a health center of its own. Its new hospital with 1,000 beds has the latest Soviet-made and imported equipment. The Japanese Echoview apparatus alone cost the plant 85,000 dollars. Besides, the hospital has its own thermovision displays, isotope devices and a laser. The plant also runs a health center with doctors' reception rooms, a women's consultation room, an industrial rehabilitation center, an ambulance and other medical services which make it possible to bring a patient back to health within the shortest time possible.

The plant's medical personnel believe that preventive medicine should be given top priority. That's why a complete medical checkup is a must for all workers.

The main links in the chain of medical checkups are the shop physicians, who have the status of deputy shop managers. They receive patients at the health center and observe them at their workplace.

What happens when the doctor finds something that needs attention? Is the patient taken to the hospital?

Not necessarily. Just imagine an ordinary day for an ordinary worker—Ivanov. His shop doctor diagnosed hypertension after a routine checkup. It's true that Ivanov's blood pressure is high and he sometimes has headaches, but he is in good enough shape not to have to be hospitalized. In fact, he has no other complaints. In the morning Ivanov comes to work and operates his machine, then he has lunch at the plant cafeteria. When his shift is over, he takes a bus to the plant overnight sanatorium instead of going home. He is given dinner and all the prescribed medication. He also receives whatever therapy the doctor ordered—physical therapy, acupuncture, baths or exercises. Besides, he can have a good time at the local sports compound or dance hall, play billiards or read a book borrowed from the sanatorium library. In other words, he can have a real rest. He'll spend the night in a comfortable semiprivate room, and in the morning he'll go to work by bus. If he feels like staying at the sanatorium for his annual leave, he is welcome to do it.

Take another worker at the same plant—Petrov. He has a lot to do at home, so he can't rest at the plant's overnight sanatorium. His course of treatment is different. For cases like his, the management has set up a medical center that enables a patient to undergo the entire course of treatment prescribed by the doctor during the workday, without leaving the plant.

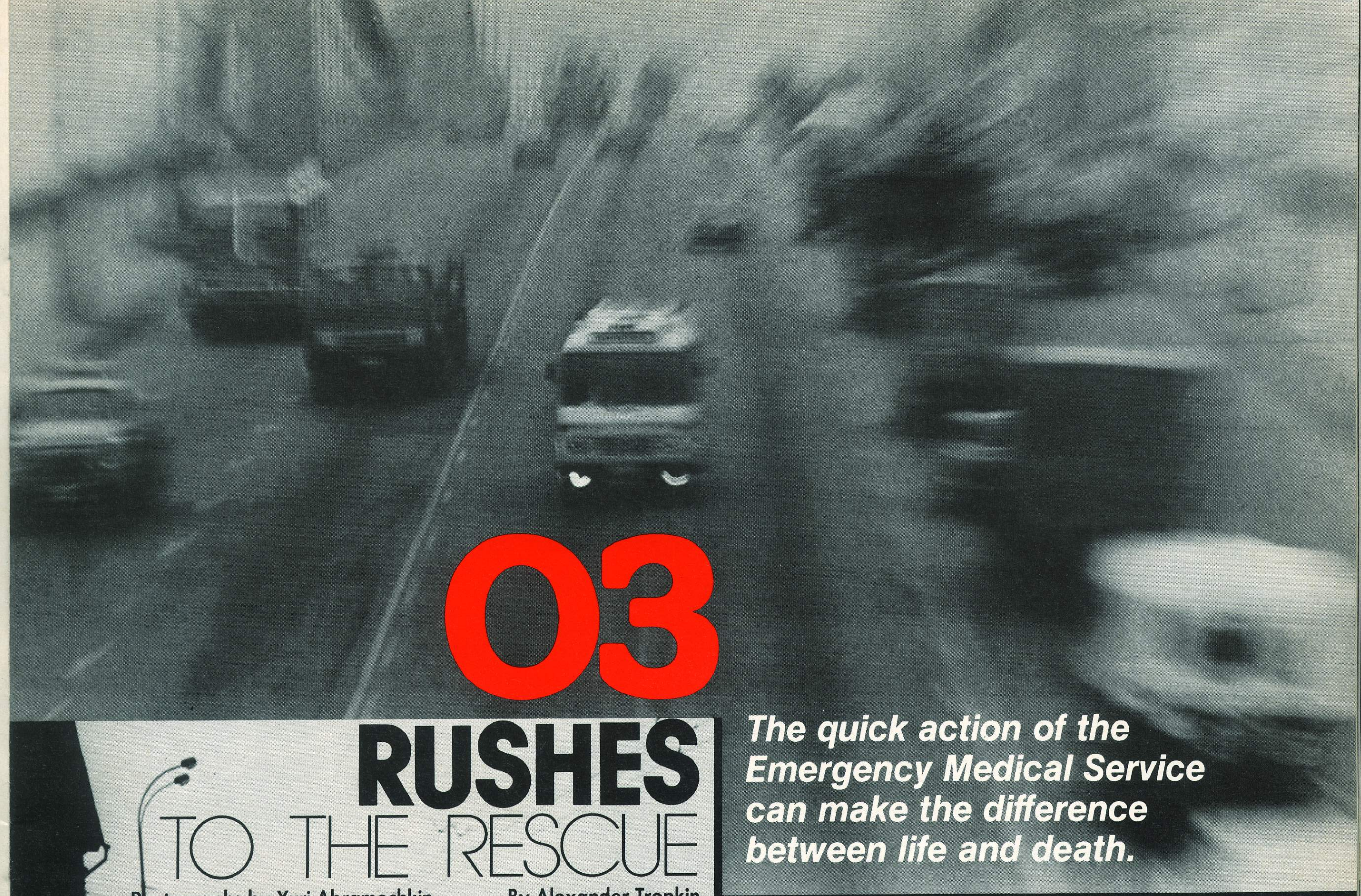
An assembly line requires the constant presence of its workers. However, even there the shop management finds it possible to replace a worker who has to be away for 20 or 30 minutes to take medication or to have a massage.

How much does a worker pay for these services? The price of one 24-day voucher to the plant's overnight sanatorium is 140 rubles. The worker pays 20 rubles, and the rest is paid for by the plant. A patient placed under medical supervision receives medication, therapy, tests and other medical services free of charge. Moreover, such a patient has priority in buying a health resort voucher.

Healthy people's health has turned into medicine's main concern today, and the phrase "medical checkup" has acquired a new meaning and a new significance.

The trade union committee of the Gorky Plant controls the entire system of medical checkups for its members. Four times a year it hears doctors' reports on the preventive work they are doing. As a result, the plant has saved over 200,000 rubles in a year's time, mainly from the social insurance fund. This means that plant personnel take less sick leave, and the money saved will be spent on additional vouchers to health and vacation resorts. Last year's figure is even more impressive—more than three million rubles. It's hard to determine what part of this can be attributed to complete medical checkups, but it is definitely large.

It's so easy. All it means is supervising healthy people's health. ■



03 RUSHES TO THE RESCUE

Photographs by Yuri Abramochkin

By Alexander Tropkin

The quick action of the Emergency Medical Service can make the difference between life and death.



People who live in Moscow are accustomed to seeing the bright minibus with fiery red stripes and hearing the piercing shriek of its siren.

But how is it possible to get used to accidents, to tragedies, to deaths, because that's exactly what the sight and sound of this minibus means? The reason lies inside the ambulance, where the hope of rescue is always alive and where people are ready to help at any time of the day or night. Knowing this and following it with anxious eyes, Muscovites think more about life than about death and believe that help will arrive in time.

An Emergency Call

In the resuscitation ward of the Moscow Nikolai Sklifosofsky Research Institute for Emergency Medical Care they assigned me to an ambulance team for a couple of days. The team usually consists of a doctor, two doctor's assistants and a driver, who are on duty for the full 24 hours.

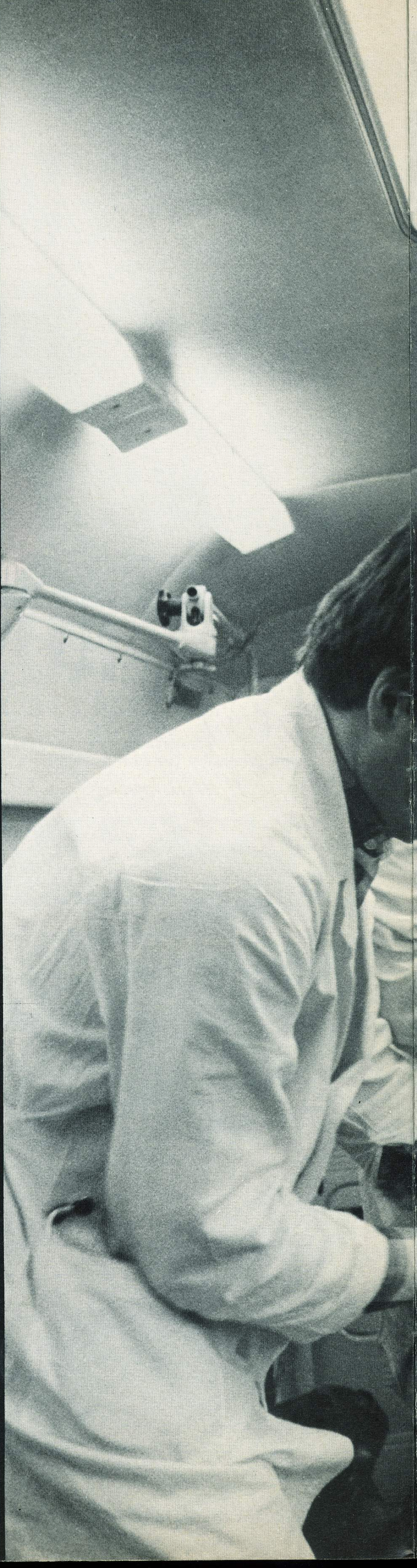
For some reason I thought that in the small, cozy room where the team on duty stays between calls, the talk would be exclusively about medicine and related matters. I was wrong. The doctor in charge, Ryurik Kukubava, who has a Southern accent, dreamily spoke about the Black Sea near which he was born and grew up. His parents still live in a seaside Abkhazian village. Kukubava and his family had recently visited them. We were listening to his story and leisurely drinking hot tea when the red lamp of a tiny radio device on Dr. Kukubava's chest began to flash.

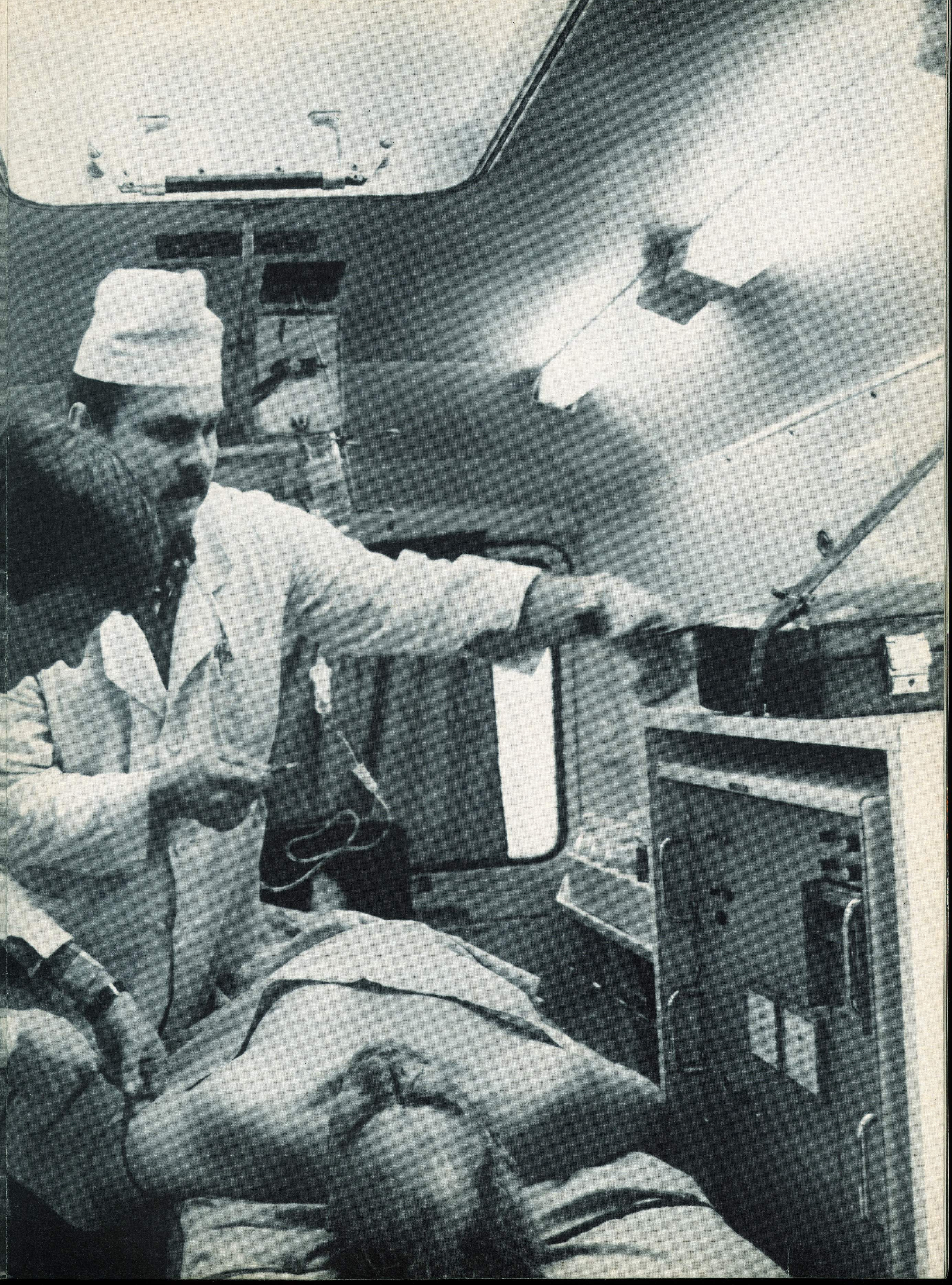
"Let's go," said Vladimir Kogan, the doctor's assistant. Everybody got up and ran out into the hospital yard. Three minutes later the ambulance was ready to leave. One more minute passed in waiting for Kogan. He had gone for the card containing the necessary details: the cause of the call, the number of victims, the address. ▶

Dial 03 for emergency medical care. The call will go directly to the control room of the city's first-aid station. Within a matter of minutes an ambulance will be speeding on its way with help. The Emergency Medical Service has both regular and specialized ambulances. They are veritable hospitals on wheels, equipped with instruments for carrying out fairly elaborate diagnostic procedures. They even have a portable laboratory so that there is no delay in starting to treat the patient.

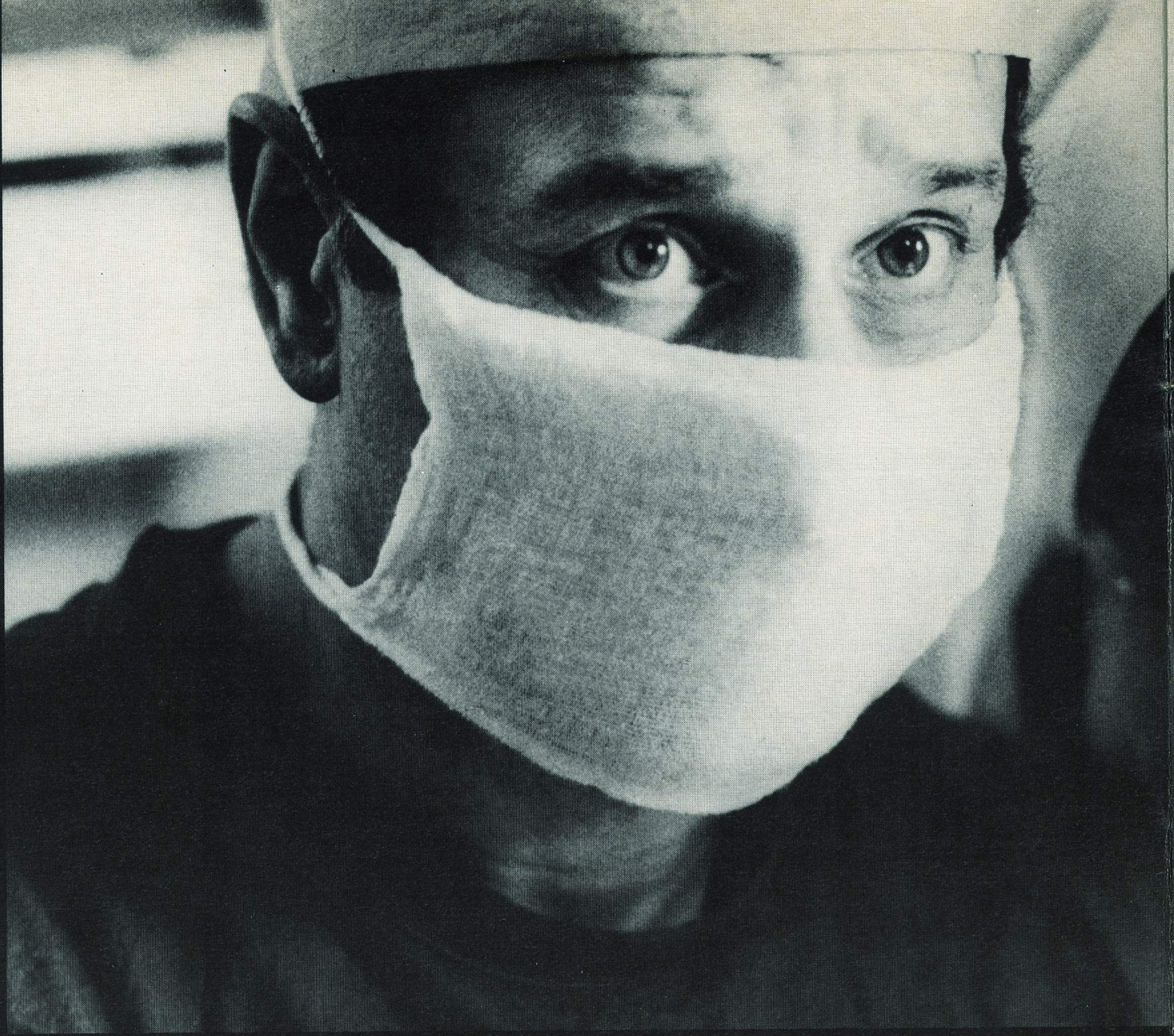






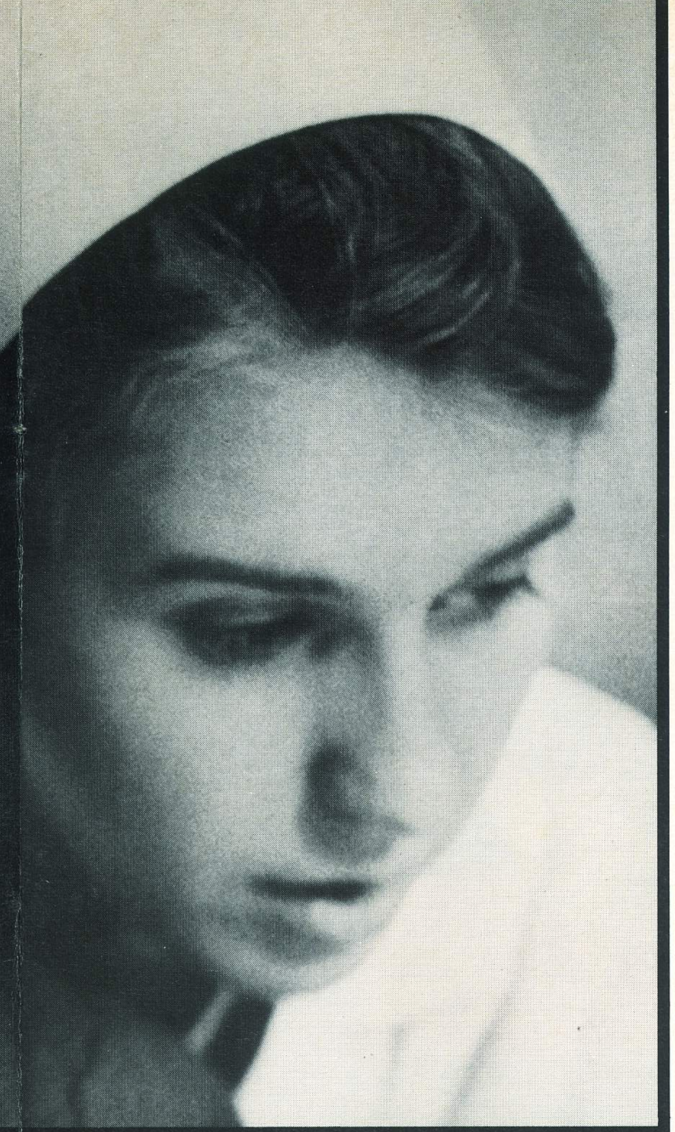






Everybody admitted to the resuscitation ward
The procedures are worked out to the last
lose when a life is at stake, and the staff
contingency at a moment's notice, including





d is on the verge of death. t detail. There's no time to f has to be ready for any g complicated operations.



"Ready!" Dr. Kukubava told the driver when Kogan got into the car. "What've we got?"

"A traffic accident."

While we're speeding to the scene of the accident, let me give you an idea of the Emergency Medical Service in the Soviet Union.

A Life-Necessitated Service

In different countries this service is called by different names. First aid, rescue squad, emergency medical care. In the Soviet Union we call it the Skoraya. But regardless of its name, its aim and substance are the same in every case: the prevention of death—the prompt restoration of the body's badly disrupted or lost vital functions.

The Soviet doctors who began our emergency service didn't have to worry about questions like "Will the service justify the enormous outlays of money it requires?" The emergency service in our country was born when the Moloch of speed, stress and infarction began to claim more and more lives. It was necessary to forestall death and confront it with a comprehensive mobile system of carefully tested lifesaving procedures, drugs and special equipment.

Research centers and communications and electronics design bureaus began to work for the Skoraya because there was no doubt in anyone's mind about the importance of its mission. The service was provided with a regular supply of donor blood in unlimited quantities and with specially equipped ambulances and computers.

Patients whose conditions are acute are the most expensive to treat. Up to 5,000 rubles may be spent on them within two or three days. If they recover, no one will ask them or their relatives to pay for the treatment since there is no charge for health care in the Soviet Union.

Sixteen minutes from the time our unit was called, it was at the scene of the accident. What we saw was a taxicab with its hood smashed against a lamppost. A huge cement truck with a broken bumper towered behind it. Two men were trying to pry open the back door of the cab. A traffic inspector came up to the doctor and briefly described the situation. The taxi driver wasn't hurt, just scared. But the woman in the back seat needed help. Her face was covered with blood.

"You're lucky!" Dr. Kukubava told her when he finished examining her in the ambulance. "No serious injuries."

After being swabbed with an antiseptic solution, the woman's face showed only minor scratches from the smashed window glass. Meanwhile, the doctor's assistant asked over the radiotelephone where the nearest first-aid station was so that the woman could be taken there.

Resuscitation Units

Resuscitation is part of the ramified citywide first-aid network. However, it operates as a separate unit with its own doctors, doctor's assistants and nurses. Moscow is divided into 13 sections, and each of them has a fully equipped resuscitation unit. As a rule, such units are established within major city clinics to make the advice of the specialists practicing there accessible at a moment's notice.

The central dispatcher service of the Skoraya handles all the calls received from city residents. Within minutes they are classified into emergency and nonemergency cases. The dispatchers send the latter to a district Skoraya station, and the former to the trauma unit closest to the scene of the accident. A militia squad, traffic inspectors, obstetricians and other experts may also be directed there if necessary. In addition, the emergency data sent to the departments via a dispatcher are automatically duplicated by a radio search system which will locate the team of a resuscitation ambulance in any corner of Moscow, even the most remote.

A Duel With Death

Unfortunately, death is still the formidable opponent of the resuscitation teams. So far, one out of every four of their patients dies. The relentless battle against death continues in the spacious and quiet wards to which the ambulances bring patients.

Glass walls partition off the resuscitation cubicles from the corridor. The chrome of hospital beds gleams coldly. IVs regulate life-sustaining fluids, and dozens of machines and monitors unremittingly watch the activity of the heart, lungs and brain. There are nurses at the control panels who transmit information about the patients, and at the bedside they are the reliable mainstay of the doctors. Together they keep the patients under observation on a 24-hour basis.

A young woman was lying in a resuscitation cubicle. Tubes and wires stretched from her head and hands to the instruments. In her immobile pale face I recognized with difficulty a woman we had brought in from a computer center. She was a laboratory assistant who suddenly felt very ill. She had turned white and lost consciousness in a matter of seconds.

"I think it's a case of poisoning," said the local doctor when our unit arrived.

"I'm not sure," answered Dr. Kukubava. "Better get her into the ambulance!"

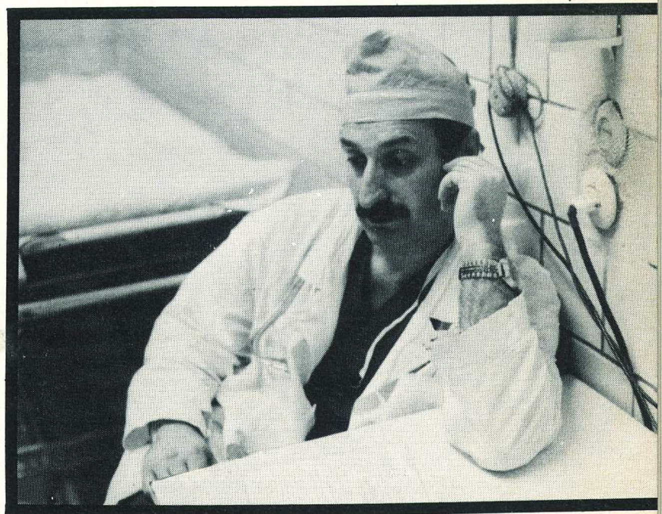
The ambulance was already traveling at full speed with its siren screaming when the lights of the heart-lung machine had gone on. At the hospital I asked if the doctors had figured out why she had lost consciousness.

"It took a while, but we did," explained Professor Valentina Kartavenko, head of the department. "The doctors were confused because the woman had lost consciousness right after dinner. They thought it was poisoning at first. But our toxicologists rejected this diagnosis. So we asked the neurosurgeons for help, and they made the conclusive diagnosis: the rupture of an anterior communicating brain artery. A complicated operation was performed on the patient, and she is beginning to regain consciousness."

"The next patient, unfortunately, is a hopeless one." The professor pointed to a robust man whose chest was heaving from frequent breathing. "A stroke affected his whole central nervous system. There's nothing medicine can do for him."

Doctors find it hard to admit their powerlessness. There is still a line beyond which death reigns unchallenged, unwilling to yield an inch of ground. And what about the doctors? Have they resigned themselves?

"Certainly not!" Kartavenko declared adamantly. "We have learned to fully restore acute breathing insufficiency; we successfully deal with great losses of blood and deep shock. The latest technical aids and drugs help us in this. Death has noticeably retreated over the years. Now the theoreticians and clinicians are focusing on restoring the functions of the central nervous system. This is a major problem today, and not just a medical problem, but a social one as well. For in returning life to people, we want to see them remain full members of society, not helpless invalids. And although we already have some definite achievements to our credit, there is still a vast amount of work to be done." ■

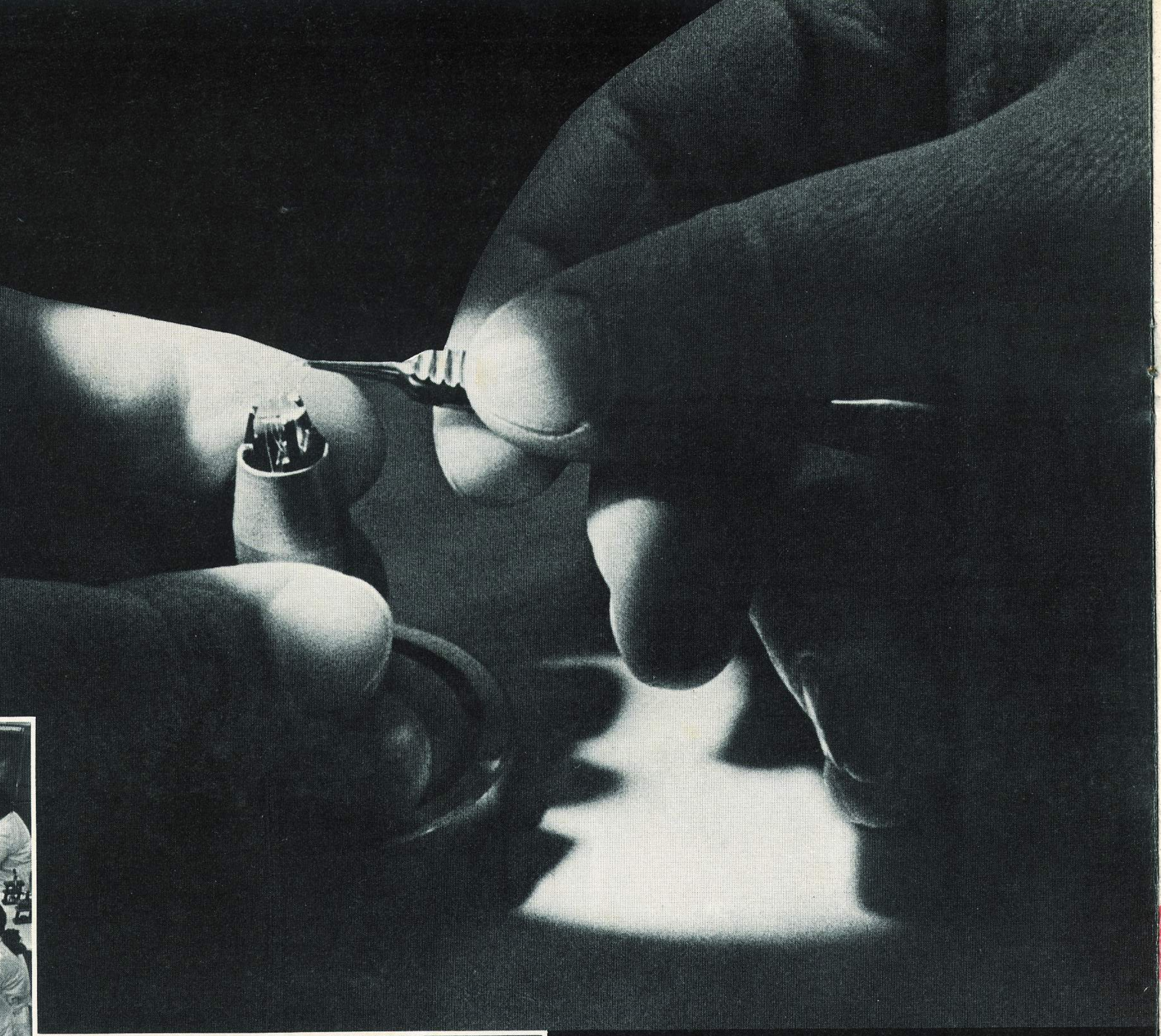


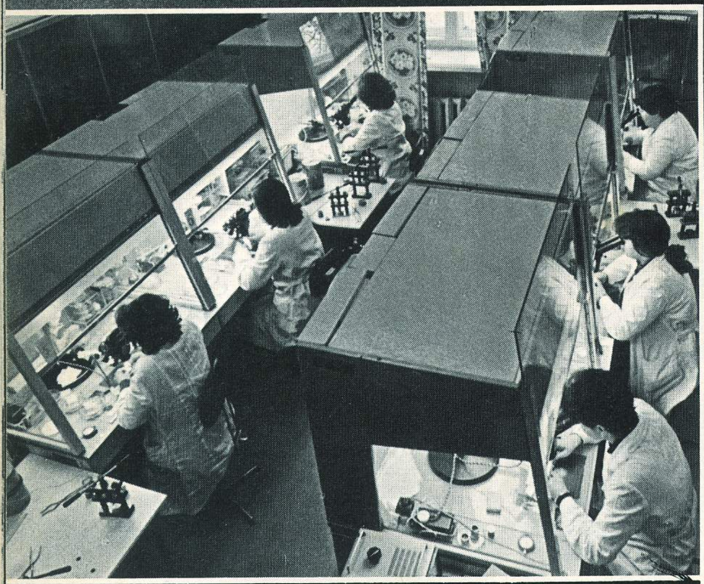
Dr. Ryurik Kukubava at the end of an exhausting day.

INVISIBLE SPECTACLES

By Natalia Bianki

The November 1980 issue of SOVIET LIFE carried Natalia Bianki's feature on Professor Svyatoslav Fyodorov, the celebrated Soviet ophthalmologist. Judging by the letters we have received from readers, the article aroused considerable interest, both in the talented physician and in his surgical "miracles" which make the blind see. Our readers seem to be particularly interested in the Moscow professor's model of the artificial lenses that the United States is buying in this country today. Here is Natalia Bianki's article about the factory where the lenses are made.







The delicate lenses go to various eye clinics in the Soviet Union and dozens of foreign countries, including the United States.

There is no need to explain what a lens is. But what about artificial lenses? I have a special feeling about them because several years ago Professor Fyodorov implanted them in my eyes.

That would not have been a good enough reason for writing an article if I did not know that many people have benefited from these lenses and that they are in great demand both at home and abroad. The institute keeps getting an unending stream of letters with requests, and specialists from the United States, the Federal Republic of Germany, the Netherlands, Italy and Great Britain come to consult the professor. Physicians from other countries are eager to learn how to implant the lenses. The United States, Japan and European countries are buying tens of thousands of Soviet-made artificial lenses. So one day I decided to go and see how they are made.

It is only one bus stop from Fyodorov's clinic to the factory. I walked up to the building, pressed the buttons of the code and the door opened noiselessly. There was a spacious room inside where polymethyl methacrylate, the material of which the lenses are made, is stored. In the room next door I saw about 15 microscopes. Women in white gowns were sitting in front of them. Their work is extremely delicate. It is hard to imagine how much patience is required to transform the plastic into a lens.

First the plastic is cut into narrow strips that look like ordinary rulers. Then they are stamped into little round blocks. After that the little holes made in them are fitted out with "arms" and "antennae." In order to give you an idea of the subsequent operations that the tiny block undergoes, I will tell you that the work is done under a microscope that magnifies the object 36 times. Then comes polishing by hand. But that's not all. The glossy blocks that have passed through the women's sensitive hands still remain bits of plastic until they are fed into a special punching machine, put in a furnace where the temperature is 230 degrees centigrade and, finally, undergo more manual polishing.

About one-third of the factory's annual output is exported to other countries. There are 30 varieties of Fyodorov's lenses, and each one has its own special processing method.

In itself the idea of creating an artificial lens is not new. Actually, the British were the first to implant the tiny "spectacles" in 1949, using plastic as the source material. After that the artificial lens went through the hard test of time, with oculists in different countries offering design modifications.

In 1966 Fyodorov designed a model that eliminated any possibility of contact with the cornea, and a year later Fyodorov and his colleague Valeri Zakharov produced lenses that were much easier to attach. Twelve years of observing people who had undergone surgery at the clinic showed that there were practically no pathological changes after implantation. Complications, if any, did not exceed 2.5 per cent. About 10,000 patients have undergone surgery at Fyodorov's clinic to date.

The advantages of lens implantation are obvious. From the functional point of view, eyes with these "invisible spectacles" look no different than normal eyes. The magnifying effect is a mere 1.5 to 2 per cent greater, so the patient easily recovers binocular vision.

The year that Professor Fyodorov proposed a new model of the artificial lens the Ministry of Health of the Russian Federation approved setting up a laboratory, which subsequently turned into the factory I have just described, and a research center with a staff of designers.

The implantation operation, however, remains the cardinal question. It is chiefly this operation that interests Soviet and foreign eye surgeons. To be fair, I must say that today Fyodorov is not the only man who holds the secret of implantation. He has taught his method to surgeons in the clinics of Moscow and other cities. Fyodorov also sees to it that other clinics performing the operation are supplied with all the necessary materials.

As for foreign specialists, everyone who wants to can attend his operations and listen to him explain his "secrets" in detail. On his trips abroad he usually performs several demonstration operations. In New York, for instance, Fyodorov managed to operate on 30 patients, and the local press stressed the fact that this was the result of mutually beneficial cooperation between Soviet and American oculists.

An article describing the case of Jean Engel was full of admiration for the Moscow doctor's skill. She began losing her sight 10 years ago, and the eye doctors diagnosed the condition as a cataract. The threat of professional incapacity was hanging over her when the "Russian miracle worker" appeared on the scene. With the help of his lenses, Engel completely recovered her vision. The article ended with words of gratitude to the Soviet oculist for his assistance and advice.

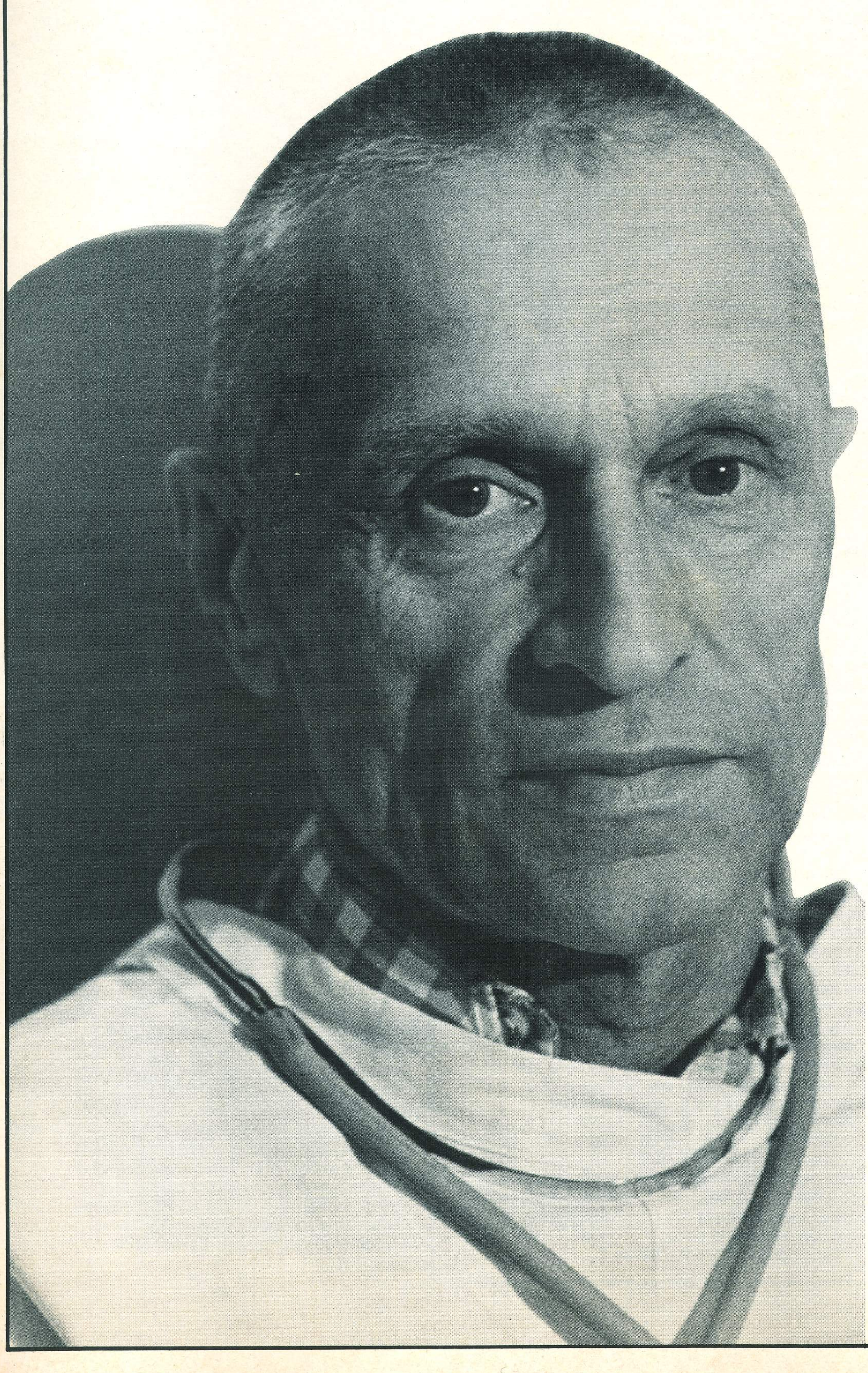
Fyodorov has very pleasant recollections of his trip to America and is convinced that exchanges in the area of medical achievements between the USSR and the USA is of benefit to the peoples of both countries. ■

A BOOK ON HAPPINESS AND MISHAPS

By Nikolai Amosov

A Book on Happiness and Mishaps is what Nikolai Amosov (b. 1913), well-known Soviet surgeon-cardiologist, professor and member of the Academy of Sciences of the Ukraine, has named his latest literary work. To represent Amosov just as a prominent practicing surgeon, the head of the Kiev Research Institute of Tuberculosis and Thoracic Surgery or merely as a distinguished theoretician of the Soviet school of cybernetics who heads the Biocybernetics Department at the Cybernetics Institute of the Academy of Sciences of the Ukraine would clearly be inaccurate. Amosov is undoubtedly a talented writer as well. His books are very popular and have been published and republished both in this country and abroad.

Amosov's latest work is a diary, with memoirs and digressions, and has not yet been brought out in book form. The following excerpt is reprinted from the popular-science magazine _Nauka i Zhizn (Science and Life)_.



I am starting this new book on my life at 4 A.M. I've been tossing in bed for a long time now. I took a sleeping pill, but even that didn't help.

Why can't I fall asleep? For the usual reason—the woman I operated on yesterday is in bad shape. It takes all my will power to keep from phoning the clinic—I know that I mustn't disturb the doctor on duty in intensive care. Besides, I'm simply scared of hearing him say, "She died."

And so, there she was, a village schoolteacher, 30 years old, who for six months now has been unable to work and has lost all hope.

"It's dangerous, very dangerous. Two artificial valves have to be implanted."

Her lips were pressed tightly together, she was all tensed up. But she was determined to fight against fate.

"Go ahead. If I put it off, I won't have the guts to go through with it. I have confidence in you."

She has confidence in me. If only I were sure myself.

"All right, call your family. I'll operate three days from today, on Thursday."

I know as much about her life as I need to, no more. One mustn't get too close to the patient before the operation.

Now all I need is her case record: "Aortic insufficiency, mitral stenosis and insufficiency, grave mitral valve calcification. Compact liver. Dyspnea even when resting."

The X-ray shows a greatly enlarged heart, its outline on the left side almost reaching the ribs. Special examination confirms the diagnosis and points to the weakening of the cardiac muscle. But it's still sufficient to perform the operation.

But that was in the past. I'm writing merely to distract myself. All sorts of "whys" are incessantly pounding in my brain. Why is the venous pressure high? Why doesn't she wake up? Larisa (she's the one on duty in intensive care) says: "Cardiac weakness." But why? That question keeps tormenting me: Why did the heart somehow manage to function before the operation, despite the failure of three valves, while now, when that failure is eliminated, there's a weakness?

Besides the two failures we expected, there was a third—tricuspid stenosis and insufficiency. That is easily remedied. We replaced two valves with prostheses. The heart-lung machine worked for 105 minutes—not too long. Everything was done without the slightest mistake. So why did it end badly?

When I left, the assistants were suturing the wound. Yet when I dropped into intensive care an hour later to see how things were going, I found she hadn't even been brought in. Arterial pressure was low, venous was high, and she showed no signs of waking up.

Snatches of yesterday continue to recur. In the morning, before taking the patient to the operating room, I talked to her relatives. They must be told the things I can't tell the patient—she mustn't be killed by the truth.

Yes, two valves must be replaced. Without that she'll live at best another year or two. But she'll feel worse and worse—and an operation will be impossible by then. Unfortunately, the operation has an extremely high degree of risk. One out of four patients dies during valve prosthetics. ▶

"Now I've told you everything. Make up your minds."

A man, the younger one, seems to be about to say something. Is he again going to press for guarantees?

"You know.... We're already in mourning. Two days ago our father died.... Heart trouble."

Oh boy! And today they might have a second death to weep about. That might really happen. How on earth will these unfortunate people stand it?

On first impulse:

"We'll call it off."

"No, no, please don't! We haven't told her.... If she finds out, she'll hardly be able to bring herself to agree. And what then?"

Perhaps it might be for the best if she doesn't agree to the operation. How am I to operate under these circumstances? But they are right too. To call it off and tell her—that's much too difficult. Not to tell her, how long can it be concealed? And besides, she's already made up her mind. Of course, it's better to operate now.

"All right. If that's your decision, we'll perform the operation. Don't expect any news until 3 o'clock. After that, please, one of you be around somewhere. Anything can happen.... unfortunately."

I entered the operating room after the operation had already begun.

"All right folks, please be careful!"

I told them the circumstances. They kept silent. And what could they say? "We swear"?

The relatives crowded around me as soon as I came out of the room. I told them about the operation, that there were three failures, that I'd implanted two valves, that everything seemed to be all right.

"Thank you, Oh thank you!"

"Don't say that yet. There's still a great deal of danger ahead. She hasn't woken up yet."

The evening of that same day.

No miracle happened. Walking into the ward after the conference, I saw immediately that things were bad.

Her face was pale and edemic. (But her hair, I discovered, was bright red, a very rare color in the Ukraine.)

The charge nurse reported:

"We're keeping the pressure up only by giving her large doses of drugs. The results of the tests are very bad. Cerebral coma."

The experience of many years tells me that's the end! Artificial respiration and drugs might prolong the agony for another couple of hours. That, too, is essential. It's easier for the relatives when their hopes fade away gradually.

I left the clinic through the backyard. The relatives did not come to my study. Evidently the attending doctors told them everything. I'm so grateful to them for that!

The patient died Friday night. There was an autopsy. The pathologist showed her heart at the morning conference. Everything had been done correctly. Death was caused by cardiac insufficiency and a weak cardiac muscle. I can relax. It's all the fault of her disease.

And yet, there is such a thing as happiness!

I've just come back from the clinic. I must jot it down at once, otherwise I'll lose the sensation. On Friday and Saturday there was already that thrill, but I was afraid of scaring it away. Now I think I can put it into words.

On Wednesday I performed three operations. Valves, as usual. All of them proceeded normally.

I implanted two valves in a man, one in a woman.

The third operation began when it was already dusk, and it was the most difficult one of the three. A woman of 41. She looked brave enough. But that was only on the outside. She had undergone an operation 13 years ago, her mitral and aortic valves were dilated at the time, no heart-lung machine used. She hadn't worked for five years. Has a husband and children. And three valves were failing.

I had put off the operation for a long time. The risk was too great. She implored and insisted. I saw the husband only on the day of the operation. Before that they'd talked to him without me. He had already become reconciled to the danger.

The operation itself was not too difficult. All the diagnoses were confirmed.

When I walked out of the operating room, it was about 9 P.M.

In the lobby the husband got up from his seat:

"Well?"

I told him the exact truth: "I don't know yet."

At 10 o'clock the patient was already in the recovery room. In a bad state.

Another talk with the husband. Now he looks at me watchfully and with distrust while I feel guilty. That's always the case: You explain, tell them everything and then stand there as though you've deceived them.

Half an hour later I again went to the surgical ward. Her blood pressure had gone up to 90. Still unconscious. I ordered her to be taken to intensive care while the pressure held. Went there myself. While I was making the rounds of those I had operated on, a surgeon comes running up: "Cardiac arrest!"

That's the end. If the heart stops functioning in such a patient, you just can't make it work again.

There they come.... The assistant surgeons are rolling the bed along, the anesthesiologist is massaging the heart, his assistant, carrying a portable heart-lung machine, is doing artificial respiration.

The bed wheels squeak.

At long last she's in the intensive care room. They hook her up to the stationary heart-lung machine and the monitor, and start fussing with the dropper. One of them keeps up continuous heart massage. That's really hard work. Every five minutes somebody else replaces him, and each of them gets up wiping the sweat off his forehead. Sometimes that goes on for hours. It's awful when the patient is conscious—sometimes even opens her eyes—and her entire life is in those beats. If the massage stops for 20 seconds, the pupils dilate and death sets in. A five-minute interval is not lethal, but it's very dangerous because blood circulation under massage is not always effective.

I stand there without interfering, everything is being done correctly. But how agonizing it is to watch. Will it start or not? And if it does, will it work? A heart can almost always be started, but usually only one in three can be made to work stably.

"Move away, everyone! Switch on!"

"It's started!"

Yes, it has started. We hold our breath and wait.

"Stopped again! Massage."

"Prepare a shot of adrenaline into the heart."

I can't remember how long it was before the heart started working. These 30 minutes felt like eternity.

"It's working. The pulse is rhythmic."

Everyone sighs with relief.

I sit by the patient's bedside for another 30 minutes. The heart beats steadily, the blood pressure is near 80. They take tests. No one asks whether or not she's conscious. The massage seems to have been effective, the pupils hadn't been too strongly dilated. But she hadn't woken up even before the cardiac arrest.

No, I mustn't fool myself. Only the strongest of patients can stand anything like that. There is no hope.

"I'm leaving, folks. Good-by. And don't phone me."

Downstairs her husband is waiting. I wish he'd gone.

"Unfortunately, I have bad news for you. While she was being wheeled to the ward, she had a cardiac arrest. We managed to start it again, but there's very little hope."

... Next morning I walk through the lobby of the clinic without asking anyone anything. Why show my impatience? What has happened has happened, and there's nothing I can do.

My large table in the conference hall is empty. There's no case report lying on it. Could she be alive? No, most likely the doctor on duty just hasn't brought it in yet. Yet subconsciously, there's that flickering hope: "What if, all of a sudden... ?"

But then the doctor on duty reports:

"Patient A. Mitral—aortic prosthetics, tricuspid plication ... Cardiac arrest ... Resuscitation ... Woke up by morning. (There, that's happiness for you!) Since 6 A.M. has been breathing independently. I haven't yet removed the tube, was waiting for you. That can be done at once."

"Go on and remove it. Thanks."



The small town of Kupavna near Moscow is famous among the blind for its school for training guide dogs. Its the only one of its kind in the Soviet Union and one of the few in the world.

Some 12 animal trainers work there with dogs, mainly German shepherds, collies, and Airedales. As an experiment and at the request of clients, the school also trains private dogs of other breeds, such as the Rottweiler, the Schnauzer, the Great Dane, the Doberman pinscher, the boxer and some terriers.

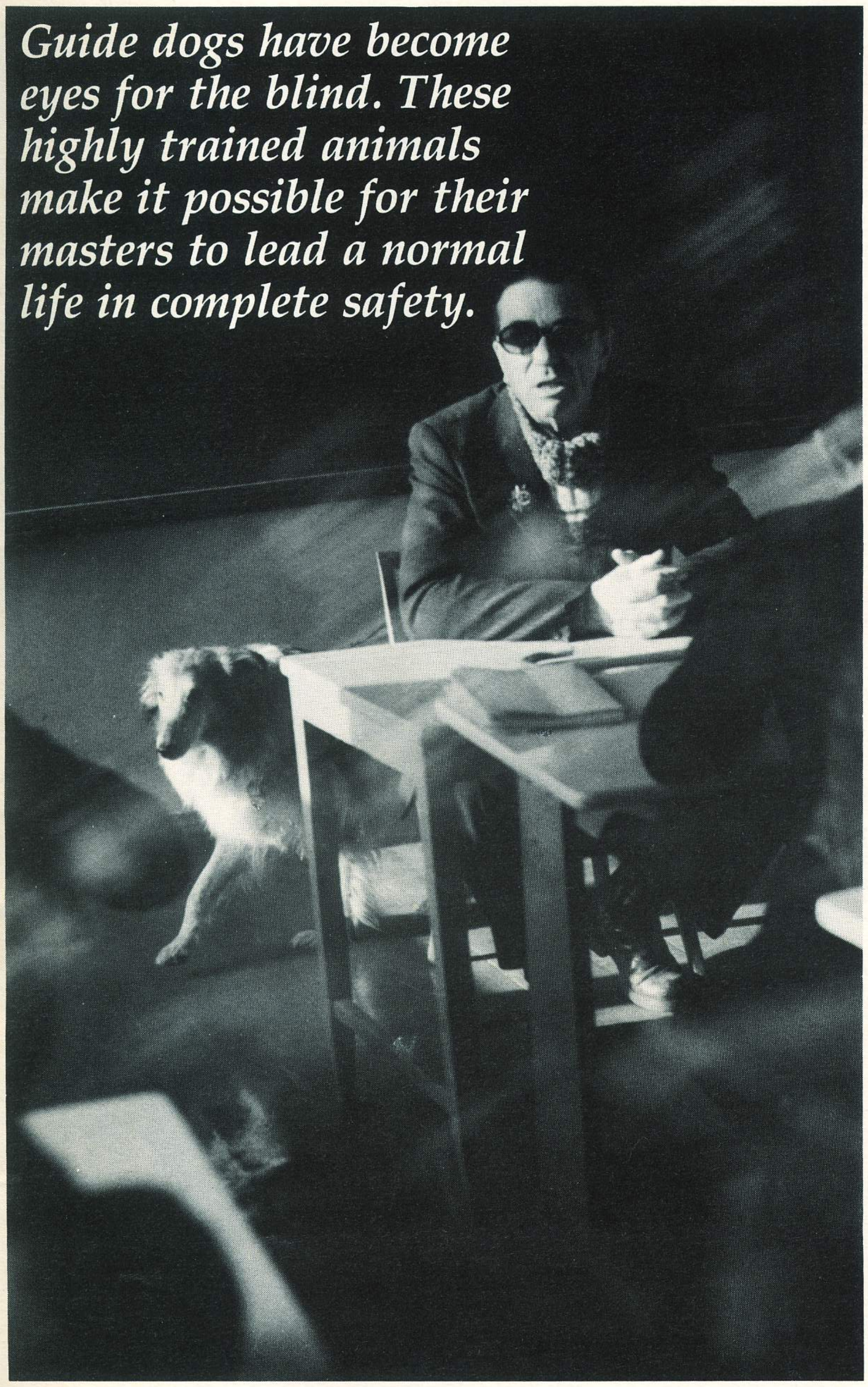
Every morning in any weather the trainers take their dogs and set off along various routes: to the railway station, shops or simply for a walk, and take the train to Moscow twice a week. The dogs must accompany their blind masters at all times and everywhere: in crowded streets and on urban transport. Dogs wearing a special harness with the Red Cross emblem and the words, "Guide Dog for the Blind" are allowed on any transport except the Metro. The work of the school's trainer, who covers some 9 to 12 kilometers a day with three dogs, is not easy.

Various obstacles are installed on the school grounds and asphalt tracks, such as narrow and broad bridges, barriers, steps simulating the stairs to a railway platform, an ordinary bus, poles, curbs and

By Marina Ryklina
Photographs by Vyacheslav Bobkov

BLIND PEOPLE NEED THESE FRIENDS

Guide dogs have become eyes for the blind. These highly trained animals make it possible for their masters to lead a normal life in complete safety.



ditches. Every day when they go over their routes, the dogs must negotiate all of these obstacles, which are periodically moved from place to place. On the same grounds there are cages with chickens and cats in them to discipline the dogs not to be diverted by passers-by or any animals and birds they might meet.

A Dog Finds His Master

Blind people who want a dog apply to the society of the blind in their area. The All-Russia Society of the Blind has primary organizations in all cities and towns that unite sightless people according to their place of residence. For example, there are 25 such organizations in Moscow. If the living conditions of the client permit, he or she can have a dog regardless of the cause of blindness. The primary organization simply sends a letter with the request to the Kupavna school.

Says Yuri Taube, the school's director: "Unfortunately there are quite a few blind people and only one school. Besides that, we receive requests from other countries as well. We do our best to fill all of them. Many blind people hope that a dog will help them live a full life, and this is often the case."

A year after blind clients have requested a dog, they receive an invitation to visit the school (usually six or seven people at a time) exactly a month before meeting with the animal. Someone must accompany them when they go there. Round-trip tickets for both people as well as their accommodations for 12 days in a hotel and all meals in the hotel restaurant are free of charge.

The All-Russia Society of the Blind bears all the expenses, approximately 1,000 rubles for each dog. It receives no subsidies from the state. The point is that in the Soviet Union there are 190 factories where the blind work. None of them pay taxes to the state. All the profit is spent on a better life for blind people.

When the day comes for the blind person to get acquainted





A special school near Moscow trains guide dogs to accompany their masters on commuter trains and city transport, help them cross streets in traffic, find stores and the way home. Left: Ivan and Valeriya Krasilnikov have had their collie Vega for many years. Above left: History teacher Pavel Belov is able to continue working. His dog Alma waits patiently at his feet for class to end.

with his or her dog, everyone is nervous, especially those who have never had a dog before. Indeed, it isn't so easy to get accustomed to each other and become friends!

The trainers are very patient in explaining the dog's habits to their future owners. From now on they will feed the animal, accompany it and give it commands. Though the trainers are close by, each day they spend less time with the dog, watching from behind trees during the walks or from a distance in order to give bits of advice to the dog's new owner.

How is it possible for the dog to get accustomed to its new master in only 12 days? Perhaps it senses that at its side is someone who needs its help. ■

LYMPHOLOGY: THOUSANDS OF LIVES SAVED

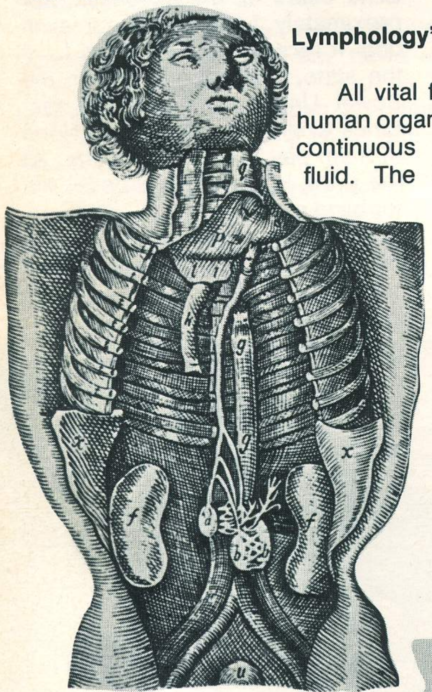
By Marina Blagonravova
Photographs by Oleg Ivanov

It looked like Yakov Sysin, 88, was going to die at the beginning of 1984. An ambulance took him to a hospital, but the patient's condition was inoperable. He suffered from too many ailments, including ischemic heart disease, arterial hypertension and chronic pneumonia. A myocardial infarction, a stroke or any other lethal complication could occur at any time. But if the patient was not operated on, he would die of peritonitis.

A little over one month later Yakov Sysin, alive and healthy, was back home.

"I was lucky," he told us, "that the ambulance took me to that hospital! I would have died if it hadn't been for the new treatment they're using."

Sysin was prepared for an operation according to a lymphology method. Soviet medical workers began developing this new field about 20 years ago. Taking its first practical steps now, lymphology can save thousands of human lives.



Lymphology's Second Birth

All vital functions of the human organism involve the continuous circulation of fluid. The lymphatic system helps to maintain the proper fluid balance in the tissues and the blood and to conserve protein and remove bacteria and other particles from the tissues. It does this through a network of fluid-filled vessels that open into the circulatory system. The toxic particles that are removed pass through the lymph nodes, which act as natural filters. Purified lymph flows into the thoracic duct, which is the biggest canal of the lymphatic system, and through it into a large vein. This is how the transparent liquid goes through its cycle in the human body.

The lymphatic system is responsible not only for the purification of the organism, but also for its immunity. And it is no less important than the circulatory system. For a long time, however, lymphology was of interest only to the theorists, anatomists and physiologists. Soviet pathophysiologist Yuri Levin, a doctor by calling and a researcher by inclination with a wide spectrum of scientific interests, decided to put a purely theoretical science at the service of physicians.

The impetus for the birth of Dr. Levin's idea was provided by the works of American scientist Dr. Benjamin Zweifach, published in the early 1960s in the U.S. scientific journals *Federation Proceedings* and the *Journal of the American Medical Association*. The American researcher proved that the condition of someone on the verge of clinical death is aggravated by the degenerating cells poisoning healthy tissue. And Dr. Levin thought about the possibility of accelerating the elimination of the lymph-carried poisonous substances from the tissues by accelerating the flow of the lymph.

It took hundreds of experiments on animals suffering from various diseases to determine if it was possible to do this. The next stage was to find drugs capable of intensifying the lymphatic drainage of tissues in patients.

In 1973 Dr. Levin received a certificate which said he was the first scientist in the world to find a method for stimulating the flow of lymph. That was the foundation for a new approach to the treatment of myocardial infarction patients, as well as of cases of occlusion of blood vessels, serious inflammation, wounds, burns and poisoning, i.e., all ailments involving metabolic disturbances and increased degeneration of cells.

The new methods of lymphatic treatment and diagnosis developed by Dr. Levin and his colleagues have already been applied in 40 hospitals in the Russian Federation and in several cities and towns of other Soviet republics.

Gaining Time in Fighting Death

The Second Moscow State Medical Institute, where Professor Levin is working at present, and other research centers are developing diverse approaches to the therapeutic uses of the lymphatic system. One of the most promising is called endolymphangial therapy, which introduces drugs directly into the lymphatic system. The main advantage, by comparison with their introduction into the blood or administering them in pills, is that the drugs get into the lymphatic vessels, where most of the harmful substances accumulate. Another plus for this method is that the concentration of a drug in the lymphatic vessels which is higher than the permissible level for the blood can produce no harmful side effects.

Administering a drug via the lymph called for a very delicate microsurgical operation. The surgeon has to make an incision in the patient's foot and find a lymphatic vessel 0.15 to 0.2 of a millimeter in diameter. A superthin tube is then introduced into it through which the drug reaches the lymph. Recently Dr. Levin suggested a new and simpler method of intramuscular injection, which can easily be done by a nurse.

"After three days of treatment by this method," Dr. Nello Saakyan, head of surgery at a Moscow hospital, said, "the condition of a patient suffering from pyoinflammatory processes in his abdominal cavity improves to a degree that would take seven to ten days by traditional methods."

In the resuscitation department, a group of doctors were crowding around the bed of Olyana Kravchenko, 76. She was suffering from pancreanecrosis, which is a horrible disease—the pancreas suddenly begins digesting itself. The old peasant woman was in tears.

"It looks like it's time for me to meet by husband," she sobbed. "He was killed in battle during the war."

Two weeks after her endolymphangial course of treatment began, Kravchenko was alive and in good condition.

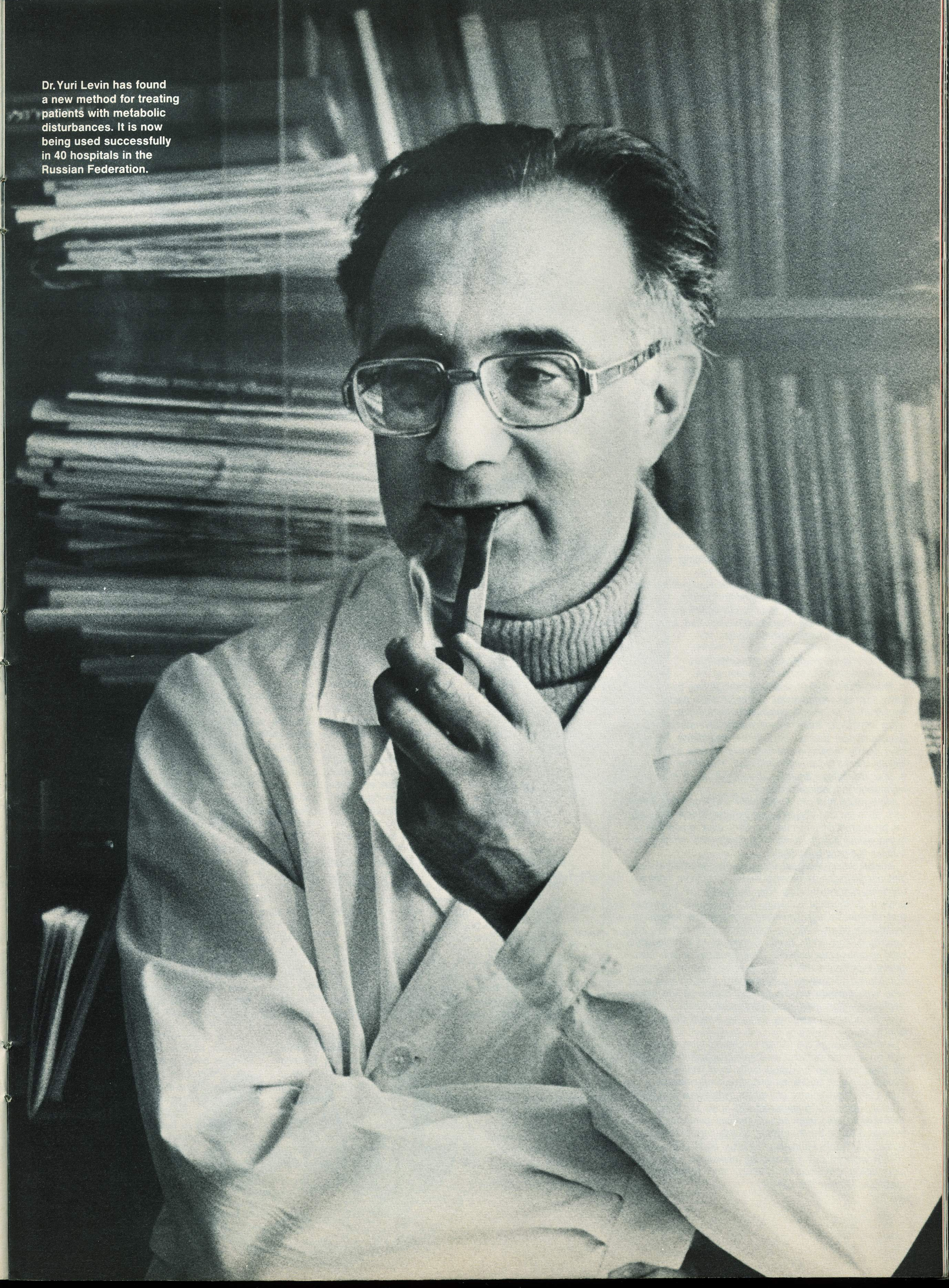
There were also many other people seriously ill who were helped by endolymphangial therapy. Another middle-aged woman sitting up in her bed on the ward said with a happy smile: "I was dying, but now I'll probably be leaving the hospital any day!" And a boy of about 15 was suffering from gangrenous appendicitis and peritonitis. Three days after his operation his temperature stabilized, and in another four days he was discharged. Both conditions were treated by endolymphangial methods.

According to staff workers of the Second Moscow State Medical Institute, the endolymphangial administration of drugs in acute pancreatitis and peritonitis cases cuts the mortality rate by 30 per cent.

Oncologists, too, are using endolymphangial methods. In the clinical hospital of the Research ▶

Although the ancient anatomists knew about the lymphatic system, it was only recently that methods for its therapeutic use were devised. Hundreds of experiments on animals have proved their efficiency. One of the most promising is endolymphangial therapy—the introduction of drugs directly into the lymphatic system.





Dr. Yuri Levin has found a new method for treating patients with metabolic disturbances. It is now being used successfully in 40 hospitals in the Russian Federation.

Institute of Proctology in Moscow, a preparation is introduced into lymphatic vessels before the excision of malignant tumors. It prevents cancer cells from metastasizing.

Situation Seemed Hopeless

The human body sometimes suddenly betrays itself. A man's feet begin to swell, ulcers appear on them like in leprosy patients, horrible pains develop in the feet, and gangrene begins relentlessly creeping upward. If the leg is not amputated, the patient will die. This is the general picture of common conditions that develop when occlusion of blood vessels, veins or arteries interferes with blood circulation and the movement of oxygen to tissues.

Professor Vadim Kungurtsev told us about the formerly "hopeless" cases of a shop superintendent in a metallurgical plant, a garage mechanic and a teacher. All of them had been sentenced to the amputation of a leg, but they will be discharged as normal people, not amputees.

Valeri Radsky, 47, a mechanic on a fishing trawler, was lying in his bed on the ward. He came here from Kamchatka in the Far East.

"About 10 days ago," the professor said, "Valeri was admitted in terrible pain from an ulcerated foot. We daily administered 8 to 10 cubic centimeters of morphine, but it gave him practically no relief." A week later he was walking along the corridor with barely a limp.

Valentin Vasilyev, a talented artist, was dying in the city of Pskov in the spring of 1982. He was suffering from obliterating endarteritis. His legs were amputated higher and higher, but the gangrene could not be stopped. It was a hereditary disease; his father and sister had died of it. The newspaper *Sovetskaya Rossiya* told its readers about the artist's condition and called on the leading medical centers to save him.

Professors Yuri Levin and Vadim Kungurtsev left Moscow for Pskov in April. And in October the paper printed a letter from Vasilyev in which the recovering artist thanked everybody who had been so kind to him, especially the doctors.

The Lymphology Boom Begins

The history of practical lymphology has been anything but easy right from the start. Few people believed in it at first. Even when convincing results were obtained after experiments on animals, the psychological barrier had to be overcome. Generally, Soviet medicine categorically rejects all insufficiently tested treatment methods. This time not only a few medicinal drugs were at stake, but a real revolution in medical practice.

Now more and more research and treatment centers all over the country are joining those working on problems of lymphology. And ever more physicians specializing in various fields are striving to master the new technique.

Academician Yevgeni Chazov, the prominent Soviet cardiologist, is among those who have contributed to strengthening the authority of the new branch of medical science. It was on his proposal that Professor Yuri Levin's report on the lymphatic treatment of myocardial infarction was put on the agenda of the Ninth World Congress of Cardiology, held in Moscow in 1982. The section of the congress that heard the report was chaired by Professor Marko Nieminen, a prominent Finnish scientist who was working in the United States at the time. Professor Nieminen said Professor Levin's report was the most interesting thing he heard during the congress.

A major aim of the father of clinical lymphology is to work out simple and available treatment methods so that they can be used both in a well-equipped clinical hospital and in an ordinary rural hospital.

In 1983 the Ministry of Health of the Russian Federation decided to recommend that 15 lymphatic methods of treating various serious ailments be introduced in all the hospitals of the republic. Meanwhile, in March 1984 the Ministry of Health of the USSR worked out a group of measures for further developing practical lymphology and spreading its methods all over the country. ■



MEN, DO NOT DESPAIR!

Drawings by Leonid Nasyrov

Statistics show that, on the average, women live 3.6 years longer than men. The difference is especially great in developed countries.

Vladimir Geodakyan, a researcher at the Institute of Biological Development of the USSR Academy of Sciences, says that investigations have shown that of 70 different species of animals, the males of 62 have a shorter life than the females. And yet the majority of centenarians among humans are men. How can we explain these two contradictory facts?

Interacting with the environment and obtaining information about it is not always safe. That means somebody has to be sacrificed. Since the young have a greater need for their mothers, nature has entrusted the male with thrashing out relations with the environment. He exposes himself to its blows and digests the information.

Certainly, the environment also affects women, but not as destructively. Males are more sensitive to changes in the environment. They are more varied in growth, intelligence, hardiness, capacity for withstanding illness, and so forth. In other words, there are more giants and dwarfs, geniuses and idiots, people who cannot endure heat or cold, grief or joy and other stresses among men than among women. That is why the male is always the first to be the victim of extreme conditions. His death provides that valuable information which tells the population, the system as a whole, what characteristics to acquire.

Women are better suited to adjust to changes in the environment. For example, in a cold climate, women acquire a thicker layer of fat. Men are less adaptable and will not survive unless they are warmly clothed. More women than men survive in various conditions of discomfort. Incidentally, that is the explanation for the higher susceptibility of the male to the diseases of our century.

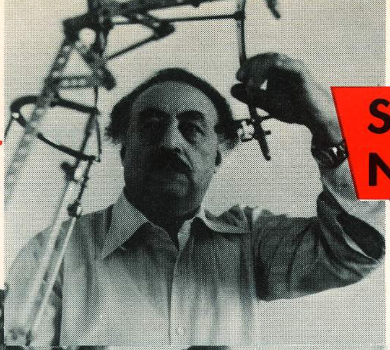
A most important conclusion can be drawn from the lesser flexibility of the male half of the population: Since evolutionary transformation affects the male sex first, it may be regarded as the "vanguard" of the entire population.

But there seems to be a contradiction here: If the male determines the trend of development, that means that humanity as a whole should have a shorter life span. In reality, people are living longer today. Actually, there is no contradiction. Longevity is determined both by heredity and environment.

Men were not intended to live shorter lives. Potentially, they are destined to live longer than women. Here is evidence of the fact: Our life span is lengthening, and all the life stages of which it consists are lengthening too. These stages of development are longer in men than in women. For example, the average intrauterine life of the boy is longer than that of the girl, but girls are born more mature than boys—by almost a month. After birth this increased development of girls progresses. They start walking two or three months earlier than boys and talking from four to six months before boys do. By the time they reach puberty, the difference between them is about two years, and by the time they stop growing, the difference is already three years. The next stage is the capacity for producing offspring. In women the period lasts from 35 to 45 years, in men 45 to 55. We can see from this that women develop, mature and grow old earlier than men. It is logical, then, that their lives should be shorter than the lives of men. That is why, in spite of the fact that women have a longer life span, the "champions" among the centenarians are men.



SOVIET MEDICINE: FACTS THAT NEED NO COMMENTS





A Surgeon Who Works Miracles

Gavriil Ilizarov, director of the Research Institute of Experimental and Clinical Orthopedics and Traumatology in Kurgan (Russian Federation), is often called an orthopedics wizard. He invented a device made of elements and modules resembling a construction toy which has already returned normal life to more than 200,000 patients who were regarded as hopeless cases by other physicians. His device ensures the fast and reliable mending of fractured bones. The limbs acquire their original length and shape. His patients are made to walk one day after the application of his apparatus. And not only walk. The children you see in the photograph exercise, swim and play volleyball under the watchful eyes of experienced therapists. Movement means healing. This is a principal law of nature and a must in the hospital.



A World Record

Scientists of the gerontology center of Azerbaijan, a Transcaucasian republic, examined 1,200 people over 100 years old. The majority of them are healthy and happy. Many of them need no reading glasses, have good hearing and even do manual labor to the best of their ability. Azerbaijan is the world record holder in the number of old-timers.

A Calf With An Artificial Heart

A short while ago the Soviet press published information on an interesting operation performed in the Institute of Organ and Tissue Transplantation. In the course of this operation, physicians replaced a calf's heart with an artificial one. After the operation, the calf lived for more than 53 days. The scientists were not thinking about world records. Their aim was to design an optimal device capable of keeping a human being alive until a suitable transplant is found.

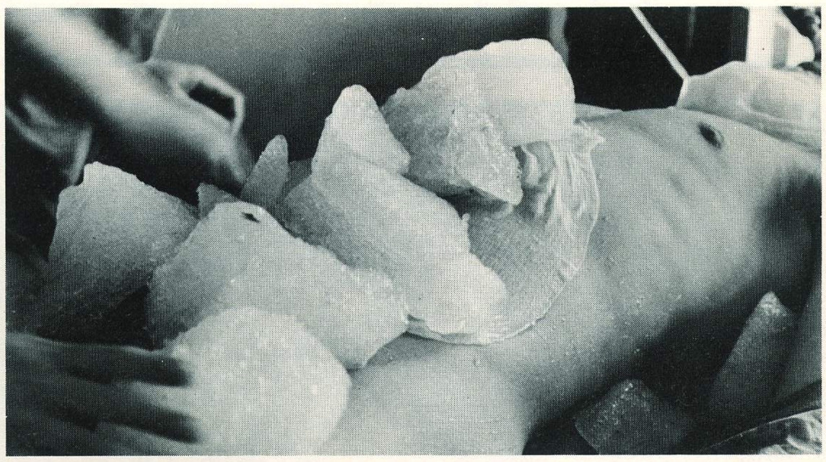
The plastic heart placed in the thorax of the calf cannot work on its own. It is contracted by compressed air pumped in by an outside compressor, while an electronic device sets the required pace of heart beats.

Diseases That Have Been Wiped Out

Soviet physicians have succeeded in eliminating the once widespread diseases of malaria and poliomyelitis. As early as the fifties, the Soviet Union launched a wide-scale antimalaria campaign, synthesized antimalaria preparations and built special parasitological stations and specialized centers.

It was during approximately the same period that a live vaccine against poliomyelitis was developed and its production was started. Nowadays, 60 to 80 million Soviet children are annually vaccinated against this disease. Children are most susceptible to it.

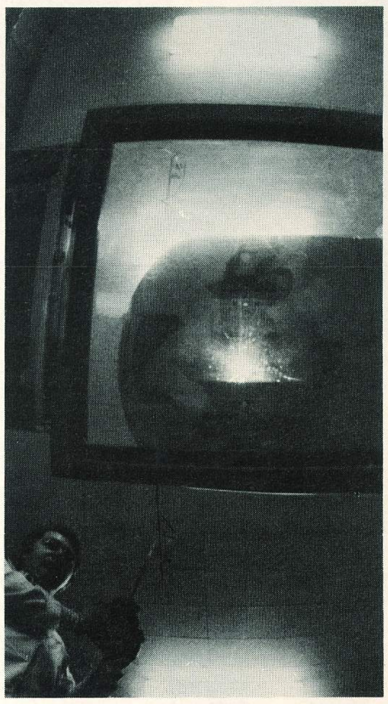
Not a single epidemic outbreak of poliomyelitis has been registered in our country since then.



Winning Patients From Death

The magazine SOVIET LIFE wrote about operations on the human heart without the use of a heart-lung machine and about Siberian surgeon Yevgeni Meshalkin, who invented the method of hypothermal protection. When the body temperature is lowered to a certain degree and the heart is stopped, the brain retains its viability for some time. Experiments carried out at the Institute of Blood Circulation Pathology in Novosibirsk, Western Siberia, headed by Academician Meshalkin, have helped scientists establish that the optimal temperature which gives a surgeon 45 to 60 minutes to save someone from death is 28 degrees centigrade.

The new method has many advantages over the conventional techniques requiring the use of the heart-lung apparatus. It obviates the use of costly donor blood, which is often in short supply, and reduces the cost of the operation as a whole. Yevgeni Meshalkin's experiments have been very successful, and his method is now practiced by heart surgeons in Novosibirsk and many other Soviet cities.



Cancer Is No Longer Fatal

Cancer hits mostly older people. With the proportion of older people growing in the Soviet population, the number of oncological cases has been growing too.

The majority of cancer patients today undergo a course of combined treatment, which consists of surgery, chemotherapy and irradiation. To carry out radiotherapy, Soviet oncological centers utilize linear accelerators, betatrons and other efficient technology.

"I can safely say that the treatment of malignant tumors is much more effective today than the treatment of many other diseases," says prominent Soviet oncologist Professor Yuri Gritsman. Statistics confirm this.

A New Method of Treating Periodontosis

Scientists of the Central Research Institute of Stomatology in Moscow have developed a new method for treating periodontosis that differs radically from conventional methods.

This disease has grown into a serious social problem. It destroys periodontal tissue and leads to tooth loss. According to statistics, close to 80 per cent of the world population suffers from it.

The new method developed by Soviet scientists ensures successful treatment of this disease. A comprehensive medical checkup reveals the cause of homeostatic imbalance.

This condition can be caused by vascular and nervous system disturbances, the loss of immunity and improper metabolism. Six or ten sessions with the doctor cure a patient completely. The new method has already helped thousands of people.

USSR-USA

There is no difference of opinion among Soviet and American educators, artists and physicians about the urgency of preserving peace.



Dr. Virgie M. Binford, supervisor of a Richmond, Virginia, public school, conducts an improvised English lesson for a third grade class in a Soviet school.

"MAY WE ALWAYS HAVE PEACE AND WORK TOGETHER TO ACHIEVE IT"

By Eduard Alesin

AN ENTRY in the Visitors Book of Moscow's School No. 7 begins with the words: "This is the high point of my visit to the Soviet Union." It was made by John H. McCuin, Associate Superintendent of the Jefferson County School, Birmingham, Alabama, who was visiting as a member of a group of American teachers traveling in the Soviet Union.

"I was so very impressed with your program of studies and the strength of your curriculum in the areas of science and math. You are to be commended for your effectiveness in teaching the English language," he noted.

The guests were particularly interested in the English classes. School No. 7 is one of the schools that specializes in an in-depth study of the language. English lessons begin here in the second grade (in the fourth grade at the regular schools) and continue through the tenth grade, the final one.

Special attention is paid to conversational English. Often teachers "create" typical situations in the class: a street, a store, an athletic field. They assign roles to the children. One, for example, is the salesman, the rest are buyers. The pupils are expected to communicate with one another in this situation.

The study of grammar is based not on abstract examples, but on texts containing interesting data about English-speaking countries or on excerpts from the works of English and American writers. Sometimes whole lessons are devoted to the customs, traditions, history and culture of these countries. The lesson on New York, for example, often turns into an imaginary trip. A map of the city hangs on the blackboard. One of the children is the guide. He or she "shows" the group around the city, describing (in English, of course) its various points of interest.

By the way, the visitors entered different classrooms and talked with the pupils so they were able to judge their knowledge for themselves. Especially lively conversations took place between the guests and the senior pupils. Many of the Americans were interested in knowing who is allowed to attend the school. It was explained to them that such schools exist in all parts of the city and that any child living nearby can go to them. Moreover, all pupils fulfill all the requirements both for the language and the general educational subjects. Mathematics, the natural sciences and the humanities are studied here just as they are in the usual school.

In the near future there will be a special vocational guidance room at the school. The children will be able to receive information about many trades and professions there, as well as about the enterprises in their district where English is utilized. After completing school, some of them can use their knowledge of the language to join the staff of Intourist, the Soviet foreign travel agency, as interpreters, guides or waiters. Some may choose to become flight attendants on international routes. But many will begin their working life in industry.

Several teachers of the school will take a brief course in vocational guidance counseling.

The visitors viewed with interest the permanent school display devoted to the Second World War. The exhibits include documents, relics and photographs telling how former graduates of the school defended the country against the Nazi invaders. And perhaps it was the visit to this display that inspired the Americans to write the following: "We appreciate and share with you the hope for world peace. May we always have peace and work together to achieve it."

ARTISTS MUST UNITE IN THEIR EFFORTS FOR PEACE

By Yuri Katsnelson

ARTISTS must join together in their efforts to safeguard peace. This is the unanimous opinion of the participants in the International Labor Conference held in Moscow in mid-May to fulfill UNESCO's recommendation "Concerning the Status of the Artist."

The meeting was initiated by three major unions—the International Federation of Actors, the International Federation of Trade Unions of Cinema, Television and Radio Workers and the International Federation of Musicians—and sponsored by the Soviet Cultural Workers Union, which played host to trade union representatives of 40 countries.

Mikhail Pashkov, chairman of the central committee of the Cultural Workers Union, said that the union unites about three million people. It deals with problems involving opportunities for the profes-



"People in the arts can always find a common language," American actor Theodore Bikel tells Soviet actress Julia Borisova.

sional growth of people in the theater, cinema and television and their working and living conditions, which are also very important inasmuch as they affect the artist's morale. That's why the Moscow meeting has given these issues priority.

"The Soviet Cultural Workers Union," said Mikhail Pashkov, "strictly observes every provision of UNESCO's recommendation. Moreover, it has taken an active part in drawing it up."

In addition to general labor legislation, there are also state provisions on the status of theater, circus and variety show performers. Trade union committees, both the local and the central bodies, see to it that they are put into practice. They take every necessary measure, from imposing fines to firing managers who have violated the provisions. This particularly concerns the protection of labor, the length and schedule of the working day, and opportunities for rest and leisure and for professional training.

Take the 615 Soviet theaters, for instance. Actors have a seven-hour working day during which the administration may ask them to come to the theater no more than twice, say, in the morning and evening, or in the morning and afternoon. As for the administrative personnel, their working hours are not limited. The hours of theater workers include not only performances, but also the preparations for them—rehearsals, classes, and the like. They can work no more than 120 extra hours a year. In each particular case the union must give its permission and see to it that theater workers are paid time and a half or double time for their extra work.

Theodore Bikel, vice president of the FIA (International Federation of Actors) and president emeritus of Actors' Equity Association, USA, who attended the Moscow meeting, noted the great concern of the Soviet state and the trade unions for people in the performing arts. He said:

"Every time I'm in the USSR, I can't help being amazed at how accessible art is to all groups of people in your country. I have in mind the financial accessibility as well. Your prices of admission are quite reasonable.

"Where the arts prosper, artists prosper too. That surely is the case here as your artists are protected while they work and are covered by social insurance when they retire. The trade unions, in particular, see to it. And your artists are consequently not afraid of old age, which is quite important.

"Today there's nothing more important for us, I think, than working together for peace, against war. Actors, no matter where they live, can understand each other with no trouble at all, can talk to each other. Their art serves peace. Their voices are the voices of reason in a world on the brink of insanity. We must do everything in our power to stop war. Guns speak when the muses are silent, as the saying goes. Reversing it, we must make the muses speak so that the guns, hopefully, will be silent."



Academician Yevgeni Chazov, chairman of the Soviet organization Physicians for the Prevention of Nuclear War (far left), and Dr. Sidney Alexander, head of the delegation to Moscow of the American organization Physicians for Social Responsibility (left).

DR. SIDNEY ALEXANDER: "NUCLEAR WAR HAS NO TREATMENT"

By Anna Nikolayeva

IN THE SPRING of 1984 Dr. Sidney Alexander, president of the American organization Physicians for Social Responsibility (PSR), visited the Soviet Union as head of a delegation invited by the Soviet organization Physicians for the Prevention of Nuclear War.

For six days representatives of the two organizations discussed many things and argued a great deal. But Academician Yevgeni Chazov, chairman of the Soviet committee, noted that both sides had a common stand on the main issues of preserving peace.

Such meetings started more than three years ago. Aware of the responsibility of physicians for human life and health, six leading Soviet and American medical researchers met in Geneva in December 1980 and decided to set up an international movement of physicians for the prevention of nuclear war. They stressed that the primary concern of physicians is to preserve life. They know perfectly well the tragic consequences of nuclear war and can therefore be particularly effective in preventing it.

The seeds sowed more than three years ago are now bearing fruit. Soviet and American physicians meet at congresses of the international movement of physicians and exchange views on problems of war and peace. Bilateral cooperation in this field is also being carried out.

Albert Einstein said more than two decades ago that if we wanted to remain alive in the contemporary world, we would have to work out strict criteria for resolving differences and that such criteria could only be truth, courage and honesty. It was these criteria that guided Soviet and American physicians at their spring meeting.

Scientists have calculated that there have been only 294 peaceful years since 3600 B.C. All told, over 3.5 billion people have lost their lives in wars. The latest data obtained by Soviet and American experts shows that a nuclear war could destroy civilization.

"We know that the things we're talking about are terrible," said Academician Yevgeni Chazov. "Some people even accuse us of intimidating them. But it's always better to tell the truth."

This is what Dr. Alexander said about the American physicians' visit to the Soviet Union:

"We came here to find out what our Soviet colleagues think about the problems that worry us, to get to know each other a little better and to see that our chief enemy is not the Soviet Union but nuclear war."

Although the Soviet and American physicians were meeting for the first time, they discussed things like old acquaintances. This was largely due to the fact that both organizations have the same goal: to tell people about the effect thermonuclear war would have on their health and lives and the way the arms race is influencing the state of public health.

The Soviet and American physicians concluded that a nuclear war can't be won, that nuclear superiority is an illusion, and that the use of nuclear weapons may lead to a global ecological disaster whose consequences cannot be justified by ideological differences.

"Our cooperation with our American colleagues," noted Academician Chazov, "has shown that we have no differences in our approach to solving fundamental problems. We may have different political views and approaches to social phenomena, but we all understand that a nuclear holocaust would become humankind's last epidemic. We also hold common stands on 'limited' nuclear war and believe that it's absurd to consider even its possibility."

Addressing Soviet and foreign journalists at a press conference at the Academy of Medical Sciences, Dr. Alexander said that "our responsibility is not only to treat but also to prevent disease. Nuclear war has no treatment. The only treatment is to prevent it."

Academician Chazov singled out two problems whose solution would help ward off the danger of nuclear conflict. First, all nuclear powers must follow the Soviet Union's example and commit themselves not to be the first to use nuclear weapons. If there is no first strike, there will be no second one. Secondly, they must abstain from deploying any types of antisatellite weapons in space. If a country does not plan to establish an ABM space system, it means that it is not preparing for war.

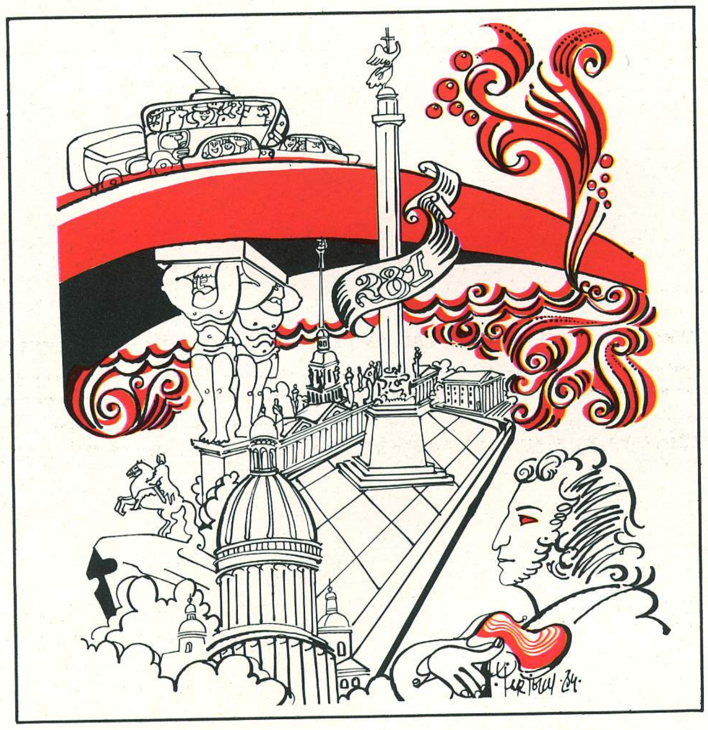
Both sides backed Academician Chazov. Dr. Alexander noted that "the militarization of space will be a disaster." PSR Executive Director Jane Wales stressed that space-based weapons are "provocative, expensive and more sophisticated."

Speaking about his impressions of his stay in the Soviet Union, Dr. Alexander said that it was clear that the Soviet people do not want war. "We are impressed that our Soviet colleagues share our concerns about the risks of nuclear war, that we have a common goal. This is far more important than all our differences. We must prevent nuclear war.

"The Soviet people are very concerned about the effects of war because they have experienced it personally, and they want to avoid it at all costs.

"No intelligent, sane person wants nuclear war," said Dr. Alexander. "The point is some people think they can achieve peace through armament. That's foolish, crazy in my estimation. The more weapons we have, the more insecure we are. That is the major issue. We feel that the arms race and all these new weapons in space increase the risk of war. That's what we must fight." ■

Around the Country



A Bridge Reaching Out to Sea

Leningrad, which was 281 years old on May 26, 1984, has had 264 floods. The most serious occurred in November 1824 when the Neva River rose 4.21 meters.

Construction of a dam that will protect the city from floods in the future is now under way. The first stage is already in operation. It consists of a 13-kilometer dam spanning the bay that looks like a gigantic bridge heading out to sea.

It is 8.5 meters high and wide enough for six lanes of traffic. The dam protects both Leningrad and the nearby towns.



A Folklore Expedition

The Siberian Branch of the USSR Academy of Sciences has started work on the 60-volume series *The Folklore of the Peoples of Siberia and the Far East*.

Not long ago the first expedition was sent to collect material and help scholars prepare the first 10 volumes. It includes historians, philologists, folklore specialists, musicologists and a sound producer from the Melodia record company.

The expedition will visit the Altai and Krasnoyarsk territories and record folk legends, songs and ancient rites.

Rocks Under Protection

Red Books usually contain a list and description of rare species of animals and plants threatened with extinction. In Georgia the Red Book includes, for the first time in the world, natural and artificial cross sections of rock which enable scientists to study the Earth's past, its unusual terrain and old trees.

The new chapter of the book represents many years of research by the Institute of Geography of the Academy of Sciences of the Georgian Republic. Little-known relicts like the Tekenteri well found in the Khvamli Mountain get special attention. If you look into the large hollow of a beech tree there, you will find it has no bottom because it is situated above a karst well about 20 meters deep. The well was formed by a so-called "organ pipe," a karst pit closed on top and open at the bottom. The beech is growing on the roof of the pipe.

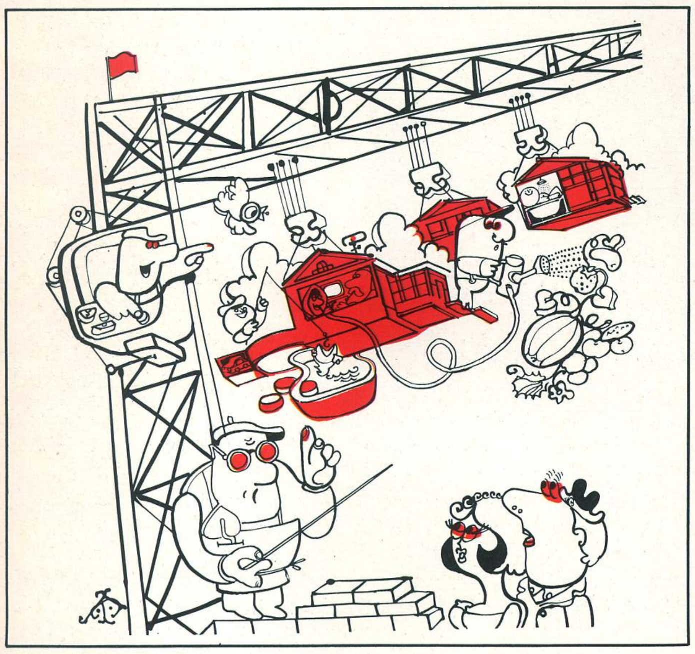
In the village of Roshka and its environs huge boulders are scattered around. They were brought down from the mountains by glaciers a very long time ago. They are some of the largest boulders in the world. The place looks like a little town out of a fairy tale. A few of the boulders can be found in the village itself. Next to them the houses look like the homes of Lilliputians.

There are young volcanoes—young in the geological sense—in all the chief natural zones of Georgia. Only six of them have been registered in the Red Book so far. The most interesting from the scientific point of view is the Tkarshet lava stream, which enables paleogeographers to date the most recent volcanic eruptions in Georgia.

From the Baltic To Sakhalin

Big seagoing tugboats have made a journey from the Baltic shores on the Atlantic to Sakhalin Island in the Pacific Ocean. They will be used by the Far Eastern deep-drilling marine oil- and gas-prospecting expedition.

These ships can tow big floating drilling vessels over large distances and provide them with everything necessary for their operation. The reinforced hull of the new tugboats enables them to lead transport convoys through ice fields and carry out salvage operations at sea.



Choose Your House

A little town consisting of 52 buildings of six different types is being constructed in Mayaki, Odessa Region, in the Ukraine. They differ in design, decoration and outward appearance, but all have modern conveniences and auxiliary buildings. The town will be a kind of permanent exhibition of houses for the countryside.

Rural residents about to buy a house or build one themselves can choose the type they want by visiting this exhibition town. There is an advantage to seeing a real-life model and not a drawing on paper.

More than 6,000 apartments, including 5,000 separate houses with yards, were built in the villages of the region in 1984.

A New Master Plan

By the beginning of the twenty-first century Kharkov, a large industrial center in the Ukraine, is expected to have a population of two million, an increase of about 500,000 compared with today.

A session of the City Soviet has approved the master plan for Kharkov's development up to the year 2005. It provides for the modernization of old areas that have no architectural value.

The exteriors of new residential houses will change too. Units have been designed from which multistory houses of any shape can be built. Soon there will be soundproof buildings along the thoroughfares whose living rooms face the courtyards. The construction of the first of these houses has already been completed.

The city's transport system will develop too. At present the Kharkov Metro is 17 kilometers long. By the year 2005 it will be extended another 30 kilometers.

At the turn of the twenty-first century Kharkov will have a river ferry. In preparation for it, the beds of the Netecha, Kharkov and Lopan rivers will be deepened and widened. By that time the second conduit from the Dnieper-Don Canal will reach Kharkov.

"Speaking Paper"

In one of the Leningrad archives a music editor has discovered paper rolls with black lines. They have turned out to be the tracks of the "Speaking Paper" sound recorder invented by Soviet engineer Skvortsov in the 1930s. One of these devices has been preserved at the Mikhail Kalinin Museum in Moscow. It is based on the principle of the optical recording of sound and resembles the sound track of a motion picture film. The discovery of magnetic recording ousted the "Speaking Paper," and the invention was forgotten.

Alexander Melnikov, a student of the Moscow Communications Institute, is now restoring a tape at the USSR Gramophone Recording Studio on which rare records of jazz music of the 1930s, operas and concerts have been detected. After repairing the tape, the music will be reproduced on magnetic records.

"The Americans"

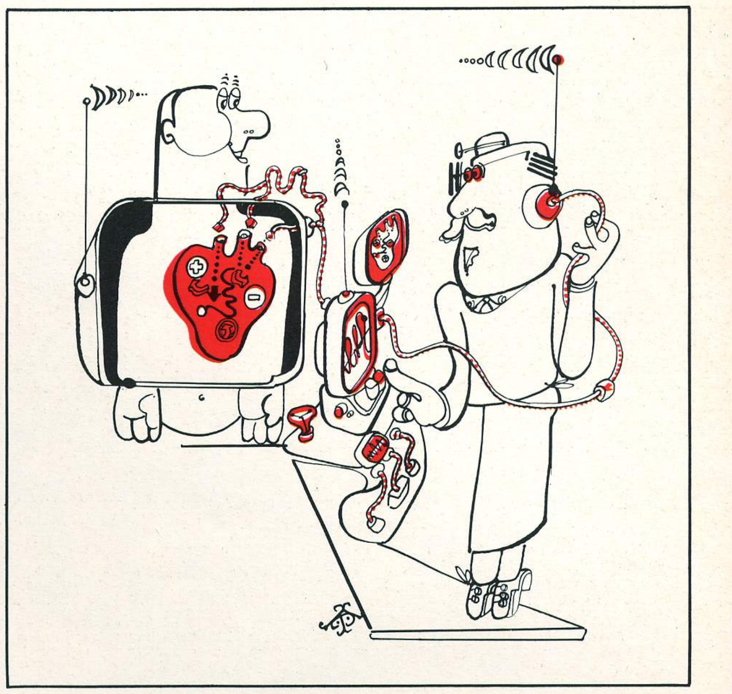
The Baroque Chamber Music Ensemble and a group of well-known singers presented *The Americans* in concert. It is the first Russian comic opera composed by Yevstignei Fomin. The performance was given in the Znamensky Cathedral in Moscow, which has been converted into a concert hall. The opera was performed only once before—during the 1799-1800 opera season. It was composed in 1788, and the libretto for it was written by the famous Russian fabulist Ivan Krylov (1769-1844). However, it was never staged in its original form. Apparently the social idea behind it was unacceptable. (The action takes place during the time of the Spanish colonization of South America, which serves as the background for a naive and genteel love story.) The opera was performed in public 12 years later after the dialogue had been completely changed. The score, reprinted in 1895, was followed by the musicians and singers of the time. Regrettably, all attempts to find Krylov's original dialogue have proved futile so far. That is why the opera was presented in a slightly abridged form.

This unique opus is very interesting from the musical point of view. Yevstignei Fomin is the composer of different types of operas. *The Coachmen*, based on Russian folk melodies, and *Orpheus*, an epic melodrama, are two examples of his work. The music for *The Americans* was composed in the pastorale style.

Seven Harvests A Year

Special devices for regulating light flux—svetotrons—help increase the productivity of vegetable hothouses. The vacuum machine-building experimental plant at Ruzayevka (Mordovian Autonomous Republic) has started to batch produce them.

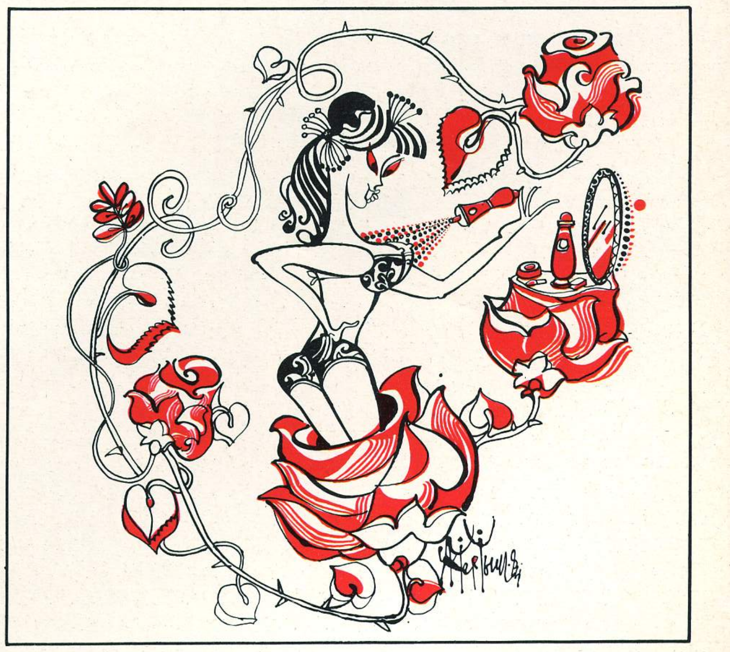
A lavsan film coated with aluminum is placed on the light frame of the hothouse roof. Powerful electric bulbs are installed under the film. At night and in overcast weather the svetotrons form a solid dome. If there is sunshine, some sections of the "mirror" are turned at a certain angle so that natural light can pass through the roof. This enhances the operational effect of the svetotron. By using this new device, it is possible to get up to seven vegetable harvests a year in hothouses.



Information from the Heart

A miniature pressure sensor designed by the Moscow Institute of Engineering and Physics transmits important medical information directly from the heart without interfering with its contractions. The sensor, attached to a flexible tube, is inserted into a vein and passed along the course of the vein into the heart without surgery. The sensor is made of a silicon crystal on which four resistance gauges have been placed with the help of microelectronics. The resistance of these gauges to the electric current changes with variations in pressure.

The device designed for medical research can also be of great help in other areas of science and technology.



The Valley of Roses

When the valleys of the Crimea are filled with the exquisite scent of roses, the time for picking the fragrant petals has arrived.

Attar of roses, extracted from the flosculus, is widely used in the food, perfume, pharmaceutical and other branches of industry. In 1984 the Crimean Rose Factory alone produced more than 2.5 tons of the valuable product.

The rose fields have been extended in order to better satisfy the growing demand. They now occupy more than 1,300 hectares.

TURKMENIA:



Ashkhabad, capital of Turkmenia, is a green city. The trees protect it from the scorching Sun.



CONFIDENCE
AND DIGNITY IN THE MULTIETHNIC UNION

Turkmenia and Uzbekistan are both celebrating their sixtieth anniversary of becoming Soviet Socialist Republics this month. A national home was tremendously important for the peoples of these formerly backward outlying areas of the Russian Empire. Bally Yazkuliev discusses here what it meant to the Turkmen people.



The Kara-Kum Canal is the world's largest artificial river. It has completely changed the republic's economic profile.



Bally Yazkuliev, President of the Presidium of the Supreme Soviet of the Turkmen Soviet Socialist Republic.

Before the Turkmen Soviet Socialist Republic was formed, Turkmenia was extremely poor and backward. The problem was to quickly bridge the gap from feudalism to socialism, a historical process that took hundreds of years in other countries.

Lenin, the great leader of the October Revolution and the founder of the multiethnic socialist state, pointed out that "...the backward countries can emerge from their present stage of development when the victorious proletariat of the Soviet Republic extends a helping hand to these masses and is in a position to give them support."

The development within the Soviet Union of the formerly backward outlying areas of the Russian Empire has shown that Lenin's prediction was quite correct. In the first years of the Soviet Government considerable sums of money were earmarked for the economic and social development of Turkmenia. For instance, in 1924-1925 Turkmenia contributed a little more than 10 per cent to its own budget. Most of the expenditures were covered by subsidies from the USSR budget.

The Central Asian republics were mainly agricultural. However, it was impossible to develop a new approach to agriculture without major irrigation systems which could dramatically increase output. In the first years of the Soviet Government 50 million rubles was allocated for the development of irrigation in our republic. Today that doesn't seem like very much. About 2.3 billion rubles has been spent on the construction of the Kara-Kum Canal alone. At that time, though, when the entire country was just beginning its development toward socialism, 50 million rubles was a large sum of money.

I should like to take one more example from the history of the Turkmen SSR. In the first years of industrialization it was decided to build a large textile mill in Ashkhabad, capital of the republic. The Soviet Government allocated the necessary funds, and construction began. At the same time, the Soviet Government passed a resolution on placing a textile mill in the town of Reutovo, near Moscow, at the disposal of the Turkmen Republic. The Reutovo mill began training Turkmen personnel for the future Ashkhabad mill. On returning to their republic, those people helped lay the foundation for the local textile industry.

It was not only in the years of the republic's formation that the Turkmen people enjoyed such unselfish aid. It continued developing in strength and scope in subsequent years. Today the Turkmen people cannot imagine their existence without these fraternal contacts or outside the multiethnic Soviet state.

The Russian czarist government claimed that poverty in our area was caused by the lack of raw materials and the inability of the native population to create higher living standards. Several decades have passed since then, and Turkmenia now makes a tangible contribution to the economic development of the Soviet Union.

In 1983 there were about 300 industrial enterprises in Turkmenia. Our republic manufactures cotton fiber, high-power ventilators for water-cooling towers, fabrics, world-renowned fine carpets, equipment for the food industry and fertilizers for agriculture. The gas industry, the youngest in our republic, is quickly developing. Turkmenia holds second place (after the Russian Federation) in gas production in the USSR.

This rapid development of Turkmen industry is not accidental. The Soviet state has always been ▶

conscious of the need to accelerate the development of our economy and culture. The five-year economic development plans envisaged a steady growth of industrial and agricultural production as well as a rise in labor productivity. Huge sums of money were earmarked in the budget of the USSR for raising economic, cultural and living standards. By the way, the Kara-Kum Canal was built with money from the USSR budget, although our republic has received most of the advantages from it.

This canal, the world's longest artificial river, has radically changed the entire economic potential of Turkmenia, particularly in agriculture. Before its construction, Turkmenia was able to harvest 350,000 to 400,000 tons of raw cotton. Today its collective farms and state farms sell more than 1.2 million tons of cotton to the state. The canal irrigates about 500,000 hectares of land. In the formerly lifeless desert there have appeared huge cotton plantations, orchards, vineyards and large villages with good houses, hospitals, schools, libraries and movie theaters.

The main achievement of the Turkmen Republic has been the feeling of confidence and dignity experienced by the Turkmen people in the multiethnic Union of Soviet Socialist Republics. When they were lagging far behind other Soviet nationalities culturally, no one reproached them. On the contrary, everybody tried to help them overcome that backwardness.

It took only a few decades for the Turkmen, a people who had no written language, to create a national literature known in many countries. Former nomads have developed industries whose products are exported to dozens of foreign countries.

Sixty years ago the Turkmen people elected their first national government. Three years later they adopted the first constitution in their history. The national composition of the current Supreme Soviet of the Turkmen SSR is as follows:

Nationality	*Number of Deputies*
Turkmens	232
Russians	57
Ukrainians	4
Uzbeks	17
Armenians	5
people of other nationalities	15

The largest national group is the Turkmen (71 per cent). This is only natural. Other national groups are also well represented, and this is also natural. Besides the Turkmens, people from about 80 large and small national groups of the Soviet Union live in Turkmenia. Each of them enjoys all the rights granted by the Constitution of the USSR and the Constitution of the Turkmen SSR, including the right to be elected to the supreme governing body of Turkmenia. I would like to note that Turkmen is the working language of the Supreme Soviet sessions. It is also used for publishing the main government documents.

I have been entrusted with heading the Presidium of the Supreme Soviet of the Turkmen SSR, the standing body of the republic's legislature. At the same time, I am one of the vice presidents of the Presidium of the Supreme Soviet of the USSR. For long periods of time I work in Moscow on various domestic and international problems. I often visit foreign countries heading delegations representing the Soviet Union on a government or party level.

In the past, few people outside Central Asia knew about the Turkmen people. Today our republic is very active on the international scene.

Side by side with the other union republics, the Turkmen Republic takes part in adopting legislation on international relations and in ratifying international treaties and agreements. Turkmen diplomats and experts in various fields work abroad in Soviet Embassies, trade missions and international organizations.

The rapid development of the Turkmen people from feudalism to socialism within the USSR is an irrefutable demonstration of the importance that mutual respect among people of different nationalities plays in the development of all of them. ■

MAKING THE DESERT RETREAT

By Eleonora Yakovleva

The Kara-Kum is much more than a shadeless wasteland. It is cotton plantations, flocks of Karakul sheep moving from pasture to pasture and from well to well, melon fields with the sweetest melons in the world, gardens in bloom and fields of golden wheat.

It is derricks on the Shatlyk gas fields; the Central Asia—Center Main Gas Pipeline; the Nebit-Dag oil fields, with pipelines, compressor stations and gasoline storage tanks; the chimneys of a chemical plant in Chardzhou supplying fertilizers to many Soviet republics; power lines transmitting electricity produced by the Mary thermoelectric power station to many towns and townships; and the Gulf of Kara-Bogaz-Gol, a huge natural evaporation pond, for the production of salt.

It is also water! Water running along the concrete beds of many irrigation canals, large and small; water filling artificial seas glittering under the sun, with hydrofoils skimming over them; the water of the Kara-Kum Canal, 1,100 kilometers long, which has brought life to once sterile sands.

It is new cities.

The Kara-Kum, which used to be lifeless and has been completely transformed, is all these things and more.

"In the past the desert scared people because of its dryness and appalling heat," wrote Aghadzhan Babayev, President of the Turkmen Academy of Sciences. "Now it attracts them because of its natural deposits of raw materials and fuel."

In 1983 Turkmenia had about 300 industrial enterprises that produced petroleum products and powerful ventilators for water-cooling towers, textiles and equipment for the food industry, fertilizers and magnificent carpets.

The newest industry is the rapidly growing gas industry. Turkmenia is second on the list of the Soviet republics producing gas.

However, cotton is Turkmenia's main treasure.

Better Than Egyptian

There are cotton plantations in the valley of the Amu Darya River. Cotton came here from the valley of another Turkmen river, the Murgab, where as early as the 1920s people decided to cultivate a promising long-staple variety.

It took agronomists a few years to get the capricious Egyptian variety Maarad adjusted to the Murgab soil. The first Soviet long-staple cotton in Central Asia was obtained in 1932.

At present the republic has its own research institute of long-staple cotton-breeding and seed-breeding, which produced 12 new high-yield, early-maturing varieties. They are now being cultivated in Turkmenia and other Soviet Central Asian republics.

Figures illustrate the development of local cotton growing better than any words. In 1925 the republic's yield came to 7.1 centners per hectare. Today it is 30 to 36 centners. The Turkmens say that they owe this to Soviet power. The truth is evident when you recall the extreme poverty and backwardness of Turkmenia under czarism, which kept it in a state of feudalism.

Ashkhabad

Ashkhabad is a green city, and its trees are not just a tribute to beauty. They are a natural screen protecting the city from overwhelming heat. At the height of summer the temperature there reaches 50 degrees centigrade.

The city, which is situated on the boundary dividing the desert and the mountains, was founded in 1881. In February 1925 it became the capital of the young Turkmen Soviet Socialist Republic. It grew rapidly, gaining momentum both industrially and culturally. However, on October 6, 1948, a terrible earthquake completely destroyed the city within a few seconds. But that was not the end of Ashkhabad. The whole country took the tragedy to heart and sent aid instantly.

A chronicle of those days says that "a week later Bakery No. 2 produced the first three tons of bread," and that in October "the workers of a casting shop of the Krasny Metallurgical Plant produced the first smelting of aluminum after the quake," that "the first shops of a silk-reeling factory were put into operation when the factory was rebuilt ahead of schedule after the quake," and that "by October 20 classes were resumed at some schools."

Today's schoolchildren in Ashkhabad learn about the quake only from their history books and from adults' stories. They go to spacious modern schools—there are 51 of them in the city—play in the parks and gardens, lie on the beaches and swim in the pure water of an artificial sea, the Ashkhabad reservoir.

Turkmenia is justifiably proud of its capital, a big industrial center with 57 factories. The city also has four theaters, a philharmonic society, several museums and about 20 movie theaters. The Turkmen capital is a major center of science as well, with its own Academy of Sciences and 30 research institutes. Some of them are unique, for instance, the Desert Research Institute and the Institute of Solar Energy.

There are also five higher educational institutions in Ashkhabad, among them the largest university in Central Asia, an agricultural institute and 13 technical colleges. These figures look impressive indeed considering that before the Revolution 99 per cent of Turkmenia's population was illiterate.

The Future Is Emerging Today

The past, present and future of humankind are inseparably linked, especially here in Turkmenia. The republic is typical of the twentieth century, but it also has distinctive features of bygone days and of the century yet to come.

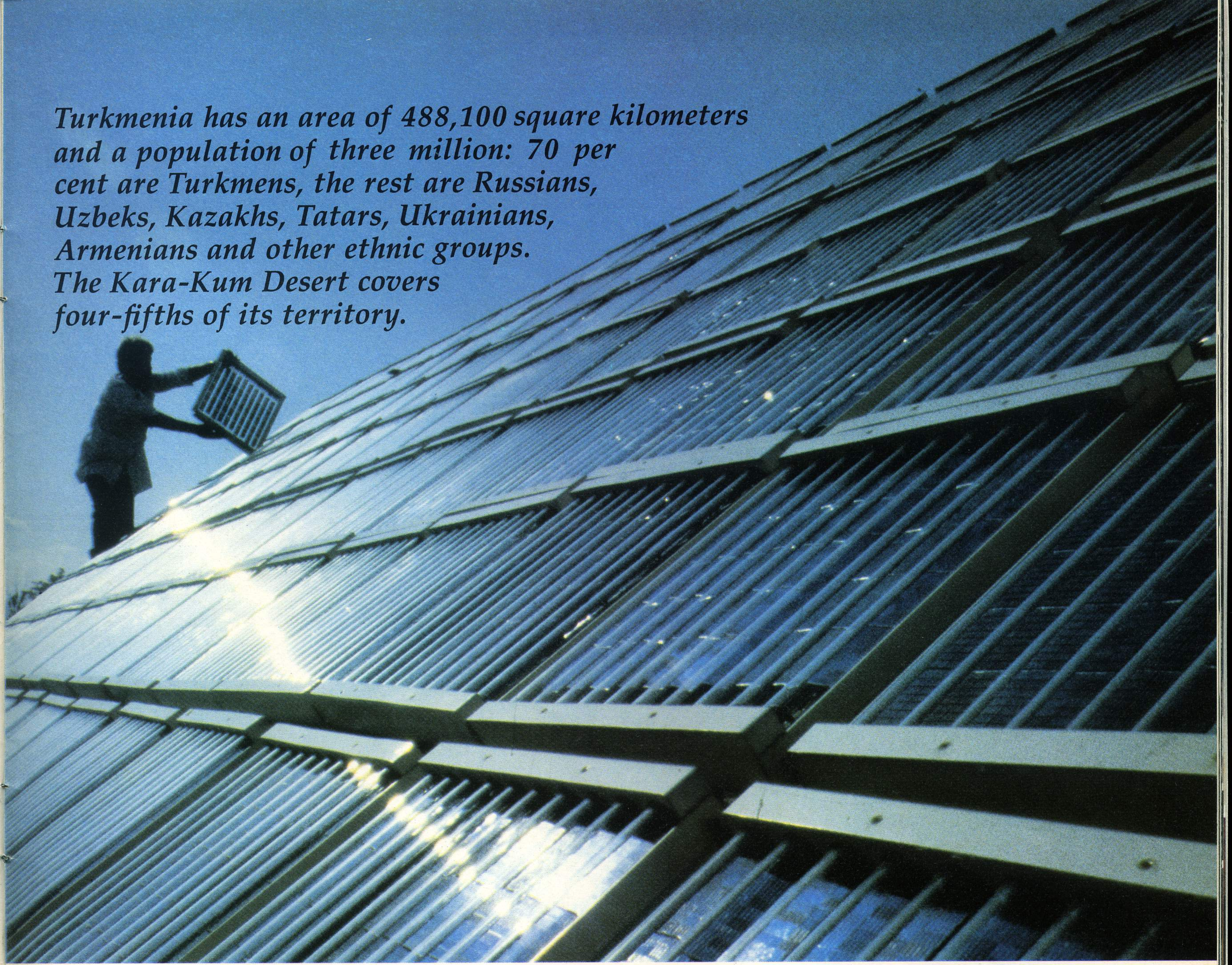
We can see its past in the intricate patterns and designs of the famed Turkmenian tapestry, the arabesques of the light local silks, the outlines of the ancient palaces now being restored and in the traditional Turkmenian garments.

Turkmenia's future is being created today. The Guidelines for the Economic and Social Development of the USSR for 1981–85 and for the Period Ending in 1990 contains the general plan for the republic's development. It is planned, among other things, to increase gas production to 81-83 billion cubic meters by the beginning of next year, i.e., by the end of the Eleventh Five-Year Plan period; to double the production of processed petroleum; to continue the construction of the Kara-Kum Canal; to cultivate 90,000 to 93,000 hectares of newly irrigated lands; to increase electric power production by 1.8 times.

At present, power per worker ratio is the most precise index of economic progress. In Turkmenia electricity is produced by hydroelectric power stations and those operated by oil and gas, as well as by solar power installations. Turkmenia is a pioneer in the latter. Research in this field is being carried out by the Institute of Solar Energy and by a local branch of the USSR Research Institute of Energy Sources.

Thousands of concave mirrors installed on the slopes of the Kopet-Dag range focus rays from the Sun, and photoelectric generators transform its energy into electricity. ■

Turkmenia has an area of 488,100 square kilometers and a population of three million: 70 per cent are Turkmens, the rest are Russians, Uzbeks, Kazakhs, Tatars, Ukrainians, Armenians and other ethnic groups. The Kara-Kum Desert covers four-fifths of its territory.





People often call the artificial body of water about 20 kilometers from the capital of Turkmenia "the Ashkhabad Sea." The residents of Ashkhabad think it's a great place to spend their leisure time. Top: Researchers of the Institute of Solar Energy are working on the problem of transforming radiation from the Sun into electricity.



Scientists of the Desert Research Institute in Ashkhabad are studying the Kara-Kum. They observe the drifting of the sands and the surprising variety of desert life.



The Turkmens are excellent horsemen. Every year after the harvest, an equestrian sports festival is held in Ashkhabad, and people flock from all over Turkmenia to participate.

SOVIET STAND ON THE PROHIBITION OF CHEMICAL WEAPONS

By Lev Semeiko

Atomic, bacteriological and chemical weapons, referred to as ABC weapons, threaten the very existence of the human race. Although chemical weapons take third place in this horrifying acronym, they are extremely dangerous. World War I proved this. A total of 1.3 million people suffered from poison gases, and 100,000 of them died an agonizing death. Since then the effects of toxic chemical agents have grown tremendously. Now their lethal doses are measured in milligrams. Depending on their toxic effect and the dose, a man can die instantly or suffer for weeks, months and even, perhaps, years.

Civilians will be the first victims of chemical weapons if they are used. A report of the Palme Commission says that if chemical weapons are used in theaters of hostility with high population density, for instance, in Europe, the civilian losses and army casualties will be expressed in a ratio of 20 to 1. The civilian population is practically defenseless against a chemical attack. A chemical war would take a toll of hundreds of millions of lives because it is inevitable that civilians would be subjected to strikes not only in the area of hostilities, but also deep in the rear. If the production of chemical weapons is not discontinued, their reserves may increase several times over, especially since these weapons are becoming cheaper and more accessible (one kilogram of sarin is estimated at just five dollars). And even more deadly chemicals may be in the offing. There are plans for the manufacture of new binary weapons.

The removal of the chemical threat is a task of highest priority, yet its solution has been put off for a century now. The first steps in this field were envisaged by the 1874 Brussels Declaration and then by the 1899 and 1907 Hague conventions. A major step forward was made with the signing of the Geneva Protocol on June 17, 1925, which banned the combat use of asphyxiating, poison and other gases and of bacteriological methods of warfare. Many international authorities admit that this protocol helped prevent the use of chemical weapons in World War II. The Geneva Protocol was ratified by the USSR in 1928 and by the USA in 1975.

A Constructive and Flexible Approach

The Soviet Union is a resolute opponent of chemical weapons. It proposed in 1969, together with the other socialist countries, the complete prohibition and elimination of both chemical and bacteriological weapons. A draft international convention was submitted for consideration by the UN General Assembly. The question was solved only partially: a convention on banning bacteriological weapons was signed in 1972. This was the first measure of real disarmament in the history of international relations. The acronym ABC lost its second letter, which stood for the category of highly dangerous weapons of mass destruction. But the letters "A" and "C" remained.

In 1972 the USSR and its allies made a proposal in the Geneva Committee on Disarmament with a view to the comprehensive prohibition and liquidation of toxic chemical agents. In an attempt to simplify the solution of the problem, the USSR agreed to the American proposal to begin with the prohibition and elimination of the most deadly types of chemical arms. In 1974 the USSR and the USA agreed to discuss the question of a joint initiative in the Disarmament Committee on signing an international convention on the more dangerous, deadly chemical means of warfare as a first step in this direction.

In August 1976 the two countries started bilateral talks on complete, effective and verifiable prohibition of the development, production and stockpiling of chemical weapons. In the final analysis, the sides agreed that the proposed ban must be comprehensive, in other words, that it must cover all types of chemical weapons, not only the most deadly. This was an important step.

However, the sides did not reach agreement on all questions. The main outstanding problem was that of verification of compliance with the proposed convention.

The Question of Verification

This question became a stumbling block on the way to final agreement.

To make it clear from the very start: The Soviet Union stands for reliable and effective verification of the observance of disarmament agreements, but it is against the concept of control before disarmament. Control and measures to limit arms must be carried out simultaneously.

The USSR is for basing this control on a combination of national and international measures. In the case of chemical weapons, both the United States and the Soviet Union have the means to verify whether agreements have been violated. Technical facilities for the remote detection of chemical agents and a system of artificial Earth satellites can register with a high degree of reliability quite low concentrations of chemical agents in the atmosphere. Both countries have facilities capable of selecting and assessing information in all fields of science and technology.

International verification measures include: the establishment of a consultative committee to which requests to check any suspicion of violation of the convention can be addressed, including requests to make on-site verification (in answer to such a request the country in question can give its consent or clarify the situation); the exchange of information; procedures for on-site verification; an appeal to the UN Security Council with a well-grounded complaint.

On-site verification plays a major role in the system of control. The Soviet Union is not against negotiated verification. On June 15, 1982, it submitted to the Second Special Session on Disarmament of the UN General Assembly an important document—"Basic Provisions of the Convention on the Prohibition of the Development, Production and the Stockpiling of Chemical Weapons and on Their Destruction." These basic provisions contain contructive new elements. They provide for an opportunity to conduct systematic international on-site verification (for example, on the basis of an agreed-on quota) of the destruction of chemical weapons stockpiles on modernized or specialized facilities and of the production of highly toxic lethal chemicals for permissible purposes on specialized facilities. On February 22, 1983, the Soviet delegation proposed in the Disarmament Committee that the "Basic Provisions" should include a ban on the use of chemical weapons and also a provision for the verification of compliance with the proposed ban, including voluntary on-site verification.

The Soviet Union backs the proposal of the German Democratic Republic, which suggested that all participants of the future convention should announce the location of facilities for the production of binary chemical weapons during the first year after its adoption and should liquidate these facilities during the first two years.

The USSR proposed renouncing the production of compounds containing a methyl-phosphorus bond, which could be used for the manufacture of chemical weapons, and to work out an order for the destruction of their stockpiles that would not give unilateral military advantages to any of the participants at any stage.

At the same time the USSR objects to the proposals which provide for free access to any chemical enterprises regardless of whether they have any relation to the production or storage of chemical weapons or not. This would be tantamount to interference in the development of the chemical industry for peaceful purposes. Incidentally, this view is shared by many other countries.

The Soviet Union also cannot accept the proposal under which only government or goverment-controlled enterprises would be covered by verification measures. This means that there would be no control over private firms producing highly toxic substances and also chemicals that could be used as components of the latest chemical weapons. The West has private firms, whereas the Soviet Union has none. This would put them in an unequal position, providing the opportunity for serious violations of the proposed convention by private firms.

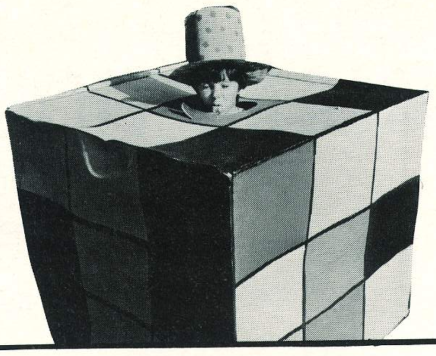
Speaking about verifying compliance with the agreement on a chemical weapons ban, Konstantin Chernenko, General Secretary of the CPSU Central Committee and President of the Presidium of the USSR Supreme Soviet, stressed: "We stand for effective verification of such agreement, for the verification of the whole process of the destruction of chemical weapons from beginning to end."

Elimination of Chemical Weapons in Europe

The "Basic Provisions" envisaged that the participants in the convention would pledge not to deploy binary and multicomponent chemical weapons on the territory of other countries and to remove all of their chemical weapons from the territory of foreign countries if they had been deployed there before. Later on, at the Thirty-seventh Session of the UN General Assembly in 1982, the USSR took another constructive step by supporting proposals on creating zones free of chemical weapons in different regions of the world. In January 1983 the Warsaw Treaty countries came out for the elimination of chemical weapons in Europe in their Prague Declaration. And, finally, in January 1984 the Warsaw Treaty countries addressed NATO with a concrete proposal to hold a meeting of authorized representatives in 1984 for the discussion of this question. At the same time the USSR suggested taking it up at the Stockholm Conference.

The Soviet Union had several reasons for making this proposal. Europe is a densely populated continent that is literally stuffed with chemical weapons. This creates an enormous risk. Chemical weapons have not yet been banned on a global scale, so it is reasonable to take partial, European measures for the time being. It would be easier to negotiate and implement these measures since they would concern a smaller number of states. The elimination of chemical weapons in Europe would provide a powerful impetus for the attainment of the ultimate goal—the signing of a convention on the complete prohibition of chemical weapons. ■

A CARNIVAL FOR EVERYONE



Reporter Anatoli Zybin writes about this year's traditional summer carnival in Gelendzhik, a seaside resort town on the Black Sea in the Caucasus. Both the text and the photographs illustrating it, which are also his, were first published in the magazine *Soviet Union.*





What a noisy invasion the Black Sea city of Gelendzhik experienced. It was attacked from the air by planes, assaulted from the sea by boats, and assailed on land by convoys of buses and automobiles. Everyone was rushing to the traditional Gelendzhik carnival. Artists invited from faraway cities came armed with joy and wit. Troops of local comics, buffoons, mummers and peddlers were ready and waiting for them. So were 100,000 vacationers.

The brass band struck up a march, and the funny wooden cannon opened fire with cardboard cigarettes shot at a "health target." The clever antismoking action was widely applauded.

The two-kilometer river of the noisy carnival stream washed the banks of the streets, pulling and turning holiday-intoxicated spectators, carrying them, along with storybook pirates and make-believe dragons, forward to the sea. The river flowed past happy ice-cream and hat vendors, trees with mischievous boys in their branches and the stands where the carnival organizers watched. Experienced carnival-goers say the Gelendzhik carnival was every bit as good as the best they've seen. ■





Six Meters Isn't Really That Much

The present world record in the pole vault is 5.94 meters. It was set by Soviet athlete Sergei Bubka at an international competition in Rome in August 1984.

By Nikita Shevelkov

ASKED one day by sports writers how many vaults he had made in his life, Sergei Bubka added them up in his head. The answer surprised even him. The total came to at least 10,000. This figure defies imagination. It means 10,000 approaches, flyovers and falls.

At 20 Bubka is the world champion and record holder. The news that he is going to perform brings thousands of fans to the stadium. Only a year ago, though, he was practically unknown.

His physique and strong will to win have a lot to do with his victories. Bubka has the very important ability of concentrating at the right moment. His performance at the international competition in Bratislava in May this year was a good example of this.

He easily cleared one mark after another and then asked for 5.85 meters. He lay down on the grass and closed his eyes, reviewing the upcoming jump in his mind. It looked just fine, but he had to test the real thing. He stood up, slowly took off his warm-up suit and picked up the pole. Then, biting his lip, he rushed forward. The stadium gave a start, jumped up and burst into applause. Quite apart from the world record, the flyover itself and the impossible safety margin between his body and the bar were fantastic. How much did he actually clear, six meters, or possibly even more?

Wladyslaw Kozakiewicz of Poland, the Olympic champion of the Moscow Games, came up to Bubka and told him: "Ask for more. Today you can do anything!"

Earlier this year, in the winter, Bubka had a face-to-face clash with Billy Olson, the famous American. Even the booklet released on the eve of that tournament featured the two vaulters together on its front cover. The American is a very experienced jumper who is particularly good indoors. Over the past few years he had pushed the world indoor record up by a good 10 centimeters until it was snatched away from him by Bubka. Olson was in excellent shape since he had specially prepared for that tournament. It was much harder for Bubka. The unusual conditions in the Forum (a wood floor on which Bubka had never jumped before), the 11-hour time difference between Moscow and Los Angeles and fatigue after the long transcontinental flight were having their effect.

At midnight Olson cleared 5.80 meters, and that was his moment of triumph. He was confident of the victory since never before had any vaulter finished second after clearing such a height.

But Bubka cleared 5.83 meters. That was when the American said: "Today you can do anything."

After the U.S. tour Bubka was named the best track and field athlete of the winter season in the United States. In the hundred-year history of such polls, he was only the second foreign (and once again Soviet) athlete to win this honor. The first was the famous high jumper Valeri Brumel.

Bubka owes much of his success to his coach Vitali Petrov. They have worked together for 10 years now. Petrov has found both a talented pupil and a codesigner of each new lucky technique.

In recent decades the art of vaulting has continuously changed as the quality of the pole improved. By now, however, all that fuss about miracle poles is over. After all, no pole, no matter how perfect it may be, will lift an athlete to a record-high mark by itself. Power, speed and the ability to control one's body all depend on the athlete, while the pole is just an instrument in the hands of a master. So it is very natural that success is once again governed not by new poles but by the vaulters' skill.

Way back at the start of his athletic career, Bubka was already fascinated by the idea of increasing acceleration. Fear was unknown to him, even when poles snapped treacherously under his weight. The coach got him used to the idea that he has simply grown stronger, and not every pole can take the strain. And then Bubka's safe landing techniques are incomparable.

If you were to thumb through the pages of Bubka's training plans, you would see that his progress has been very steady. You might even think that everything has been smooth and easy for him, but this isn't so. Bubka has had his setbacks, too. "But I could never put the whole blame on Sergei," Petrov recalls. "He had to compete too often when he was not fully recovered from some illness or injury."

Thanks to his good nature and the ease with which he communicates, Bubka has instantly made friends on the national team although the senior members on it are four or five years older. He is willing to share everything he has or knows. Although he doesn't look it, he is really ambitious and not indifferent to laurels and fame. The model vaulter for him is the well-known Soviet athlete Konstantin Volkov from Irkutsk. Although he has beaten him several times in various competitions, Bubka continues to consider Volkov an example to follow.

Bubka often spends the time before the start of competitions with boys he has just met at the stadium or on the way to it. Then, when he stays alone to concentrate and to prepare for the jumps, the boys naturally become his most active supporters. Since Bubka has to jump alone quite often by the end of the competitions, this is very important to the gregarious young vaulter. He often plays soccer with youngsters near the stadium where he'll be appearing in a couple of hours. He earnestly claims that he would have certainly been a soccer player had he not met Petrov.

It is peculiar that with his generally inquisitive nature, Bubka takes no interest during the competitions in how his main rivals are faring. When he returned home after the first world championship in Helsinki in August 1983 and the coach asked him about the new developments in vaulting, Bubka answered: "I didn't watch them jump. I was thinking about my own vaults."

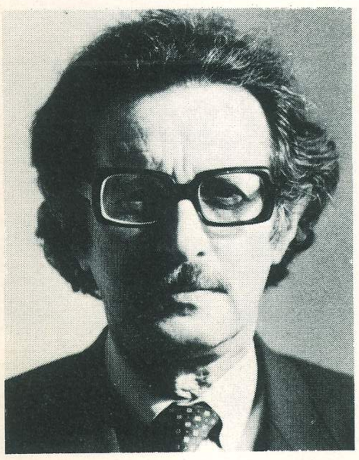
The 5.70 meters that earned him the gold in Helsinki was not even as good as his relatively modest personal record of that time, 5.72 meters. That's why when he got home some experts rushed to qualify his success as a lucky coincidence made easier by the failure of the favorites.

Within less than 12 months, however, Bubka has raised his personal record by 18 centimeters, making three improvements to the world record in the process. Bubka is a truly talented athlete. He clocks 10.2 seconds in the 100 meters and jumps 7.80 meters. Gymnastics is a mandatory element in a pole vaulter's training, and Bubka is one of the best gymnasts on the team. He performs all the somersaults, flips and roundoffs with apparent ease. But it is only in pole vaulting, of course, that he performs with utmost dedication.

So when Bubka says that he already sees the six meters, he really means it. ■



Thoughts on Pedagogy



BRINGING UP CHILDREN

By Simon Soloveichik
SOVIET LIFE Commentator

THERE IS a pedagogical riddle which, if left unsolved, will undermine the best of pedagogical theories. It boils down to this:

Every nation has its traditional way of bringing up children. In some countries people devote a lot of time to children, while in others they do not; some prefer a strict upbringing, while others prefer a permissive approach; some nations have a boys' cult, while others have a girls'. There's hardly a method known that isn't favored in one country or another. Moreover, people are inclined to think that one system of education is better than another, that it is more compatible with their national ideal. For example, the method used in Japan, where they say children are not punished, is admired in the Soviet Union.

Yet I doubt if you will find a single person in Russia or in Japan who would even suggest that as a result of their upbringing, adult Japanese are better (or worse) than adult Russians.

This is the riddle: If people of different nationalities are equally good (and this is actually the case), then we have to admit that their methods of bringing up children are of equal merit despite striking differences in approach. Then what's the sense of the theories based on the preference of one system of rearing over the others? The logical conclusion would be that anything goes. But no one would agree with that.

Different Methods—Same Results

To resolve the contradiction, we will have to admit that even though there are differences in the educational systems, they must have something in common, and it is this common factor, not always immediately apparent, that is of paramount importance.

If you visit classrooms in Bukhara, Baku, Yerevan, Vilnius, Riga, Kiev, Tambov, Novosibirsk or Arkhangelsk—I have mentioned at random the Soviet cities I have been to at one time or another—you will be surprised at the difference in the behavior of the students during classes and recess and their attitude toward the teacher and their studies. Outwardly, everything is different. Even the classrooms and school buildings in Bukhara and Vilnius look as though they were situated not only in different towns, but even in different countries and in different parts of the world. That's really so, since Vilnius is in Europe and Bukhara is in Asia. But the minute you start to analyze their methods of upbringing, you will see that they all have a common feature—group upbringing. It is practiced in the schools of Bukhara (Uzbekistan), Tambov (Russia) and Vilnius (Lithuania) and in all the other schools throughout the country. No matter what people in other countries may say about it, no matter how much they may make fun of it and repeat that group upbringing leads to uniformity, in my opinion, it does not in the least detract from one of the greatest humanitarian ideas of the twentieth century, the collective upbringing of children. It corresponds to common sense and the wonderful spirit of humanism to such an extent that good teachers in any country unconsciously use it. If you study any of the traditional systems of upbringing seriously, you will discover that they include the idea of collectivism in one form or another. Any upbringing that did not teach children how to be part of society would be clearly inadequate in our contemporary world, with industries where people have to work together and cooperate all the time and where people have to live together in overpopulated cities.

Let us try to understand better what educators in this country mean when they use the word "group" or "collective."

A Viable Alternative

At the moment I live in the writers community of Peredelkino, not far from Moscow. We have a very good library, but it does not have the book I would like to refer to. I'm talking about John Locke's *Some Thoughts Concerning Education*. It is one of the most serious books ever writen on pedagogics, and the attentive reader will have no trouble finding paragraphs in which the philosopher and educator writes with despair about bringing up children in public institutions, i.e., schools. If you put your child in a school, wrote Locke, and he falls in with pugnacious and restless boys his age whom even the teacher cannot handle, forget about a proper upbringing for your child. In other words, Locke wrote that nothing good could come of such an education, that there was no remedy for it and no way out. That was written 300 years ago with such candor that even now some of us would subscribe to the attitude of the English pedagogue.

The literature of different countries contains descriptions of the horrors of school years, of the tyranny of the strong over the weak and of the endless humiliations. In Russian literature the subject is described most vividly by the prerevolutionary writer Nikolai Pamyalovsky in his book *Seminary Life* (1862-63). One of the "innocent jokes" practiced in this school for priests was to make a little paper cone, put some gunpowder in it, stick it into the nose of a sleeping boy and set it on fire.

For a long time it seemed that there was no way to change things, that brute force and the rule of the fist would inevitably remain part and parcel of any teenage group. It was only in the twenties, after the 1917 October Revolution, that a large group of Russian educators found the only alternative to the mores reigning in "seminary life." It was the principle of collective, or group, upbringing. This principle was reflected with utmost clarity in the theoretical works and fiction of the outstanding Soviet educator, Anton Makarenko (1888-1939), who is considered the father of collectivism. The times, the spirit of the Revolution, the new way of life and the new outlook fostered its development.

Overcoming Peer Pressure

Suppose you are a teacher and you are responsible for the upbringing and education of some 30 or 40 youngsters. If you are not a genius and do not have supernatural powers over youngsters, then no matter how much you lecture them or how much you work with each student individually, the influence of the other youngsters will far exceed your own. The majority of your students will follow the rules accepted by their peers. Consequently, there is only one solution: You have to influence not so much each individual student as their group conscience, what I called "their code of behavior." In other words, you have to shape these 30 or 40 students into a close-knit group or collective. That is the term that we use not only for a small group of youngsters, or even the students of one grade, but a special type of organization of young people that share the aims and the values of the entire nation. When these lofty aims and values (such as goodness, honesty, humanism and internationalism) proceed not only from the teacher but from the children themselves, the impact is tremendous. Only noble ideas and aspirations can provide the proper foundations for bringing up a child. Only in a group of youngsters in whom these ideas have been instilled can every child be truly safe and, hence, able to develop freely.

The reform now taking place in the Soviet school is, among other things, supposed to give teenagers more opportunity for teamwork so that lofty ideals, which is the only thing that can give force to any type of upbringing, will impress themselves on the minds and hearts of the young people.

Thanks to the research conducted by educators in Leningrad, the idea of collective upbringing was enriched by a most essential factor. It seems that for intelligent upbringing you need not just any group but *a group of children*.

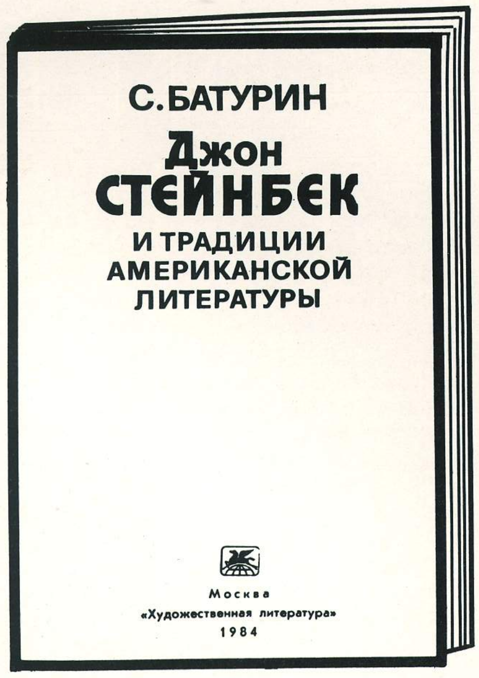
Our next article on the subject will explain precisely the kind of group that is meant.

MEETING OLD FRIENDS AGAIN

By Dmitri Urnov

Doctor of Science (Philology), Senior Associate of the Gorky Institute of World Literature of the Academy of Sciences of the USSR

New Books



I read the book *John Steinbeck and the Traditions of American Literature* by Sergei Baturin (Khudozhestvennaya Literatura, Moscow, 1984) in manuscript form in my capacity as a consultant. After proposing some amendments, I recommended that the book be published. When it came off the press, it was so changed that it read like a new book. To begin with, it is now double the original size and includes new names. Previously it was a book about the life and works of John Steinbeck, the author of *The Grapes of Wrath* and a Nobel Prize winner. Now it includes material on Theodore Dreiser, the author of *An American Tragedy*, and James Fenimore Cooper, the creator of Leatherstocking.

Cooper, Dreiser and Steinbeck are three Americans who have become "naturalized" writers in the Soviet Union. Cooper is no longer read in his homeland even by children, whereas in this country you will find grownups as well as children reading *The Pathfinder* and *The Last of the Mohicans.* Dreiser has practically become a "Russian" author or, in a wider sense, a "Soviet" author because his works have been translated into the numerous languages of the peoples inhabiting the USSR. Steinbeck is also widely read here and not only his *Grapes of Wrath* but also *The Winter of Our Discontent, Tortilla Flat* and *The Red Pony.* I remember when Steinbeck came to our country how pleasantly surprised he was at the number of people who had gathered to listen to him at the Library of Foreign Literature in Moscow.

Soviet people are fond of literature. It's a favorite topic of conversation. Not only do they read the books, they also like to read about the people who write them. It seems to me that Baturin's book must already be sold out. I don't see it in the book stores, though I must say that 25,000 copies is a large edition for this type of book.

Baturin knows the country whose literature he is writing about. That is why, though I do not agree with everything he says, I recommended that the book be published. The author has absorbed the flavor of the American language so that the book seems to be written in American even though the words are Russian. Yet Baturin remains a Russian, more precisely a Soviet expert who studies his subject from two points of view, both as a native and as a foreigner. It is rare for a person to be able to think the way another nationality thinks and reveal the most esoteric features of its literature to his own people.

As I said, all three American authors have become "naturalized" in our country. Their affinity to all of humankind and the universality of the problems they wrote about make Soviet readers accept them wholeheartedly. At the same time, we have always read Cooper, Dreiser and Steinbeck as strictly American writers. The reason we read them is that they deal with problems we know about from personal experience and our literature, and we want to know how these are treated by Americans. So, after reading and rereading *The Last of the Mohicans, An American Tragedy* and *The Grapes of Wrath,* it is interesting to have a man who knows America firsthand explain how the country is reflected in its literature.

Even though Soviet people are conscious of the fact that the United States is a very big country, because we are so far away, we are prone to lump together everything we know about it—the Empire State Building, Niagara Falls, the Rocky Mountains, Broadway and Wall Street. For us they all simply represent America, and so do the three writers I mentioned. Baturin's book makes us really see that Cooper was primarily a man from New York State, on the East coast, that Dreiser was from Indiana, in the Middle West, while Steinbeck's home was California, on the West coast. It helps us to better understand the authors' background and the settings for their books.

I am not speaking of geography or of distance and vastness in themselves, and not of tourist sights either. What I want to stress is that history was made in the places the authors describe, and among the participants and witnesses of that history were the son of a judge and retired seaman (Cooper), a man from a remote provincial town (Dreiser) and the son of a wealthy businessman (Steinbeck). One was a contemporary of the Jackson era who saw five presidents in his lifetime; the formative years of the second coincided with an economic boom and the Depression; while the third witnessed the last mass migration of farmers in the history of the United States, the last spontaneous rush to "new horizons" and "big opportunities." The reader who knows the works of all three will find much in Baturin's book that is interesting to the inquisitive. For one thing, where and how did the life of the author intersect with those of his characters? How well did Cooper know the virgin forests, the Indians and the trappers? How far did Dreiser penetrate the big city jungles? How close was Steinbeck to the migrant population of America and "the little folk" whom he so sympathetically depicted? By the strength of his talent every good writer convinces his reader that he and his characters are one, that everything he writes about is true. So it is especially important to hear the opinion of a man who really knows and who can, without spoiling your impression of what you have read, add a lot of relevant information.

Usually, after getting to know what such an expert has to say, you feel like rereading what you have once read and examining the familiar pages through his eyes or, to be exact, with your own eyes but enriched with fresh knowledge. We shall be able to determine the success of Baturin's book not only by the number of people who buy and read it, but also by the number of people in whom it arouses the wish to read the books of Cooper, Dreiser and Steinbeck again.

Let us hope that the number of such readers will be substantial. At any rate, that's what I hoped when I recommended the book for publication. ■

INTERNATIONAL PHOTO EXHIBIT "PEACE TO THE WORLD"

The Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries will hold an international photo exhibit "Peace to the World" in April 1985 at Moscow's Friendship House. The motto of the exhibit is: "For Peace and Friendship Among Nations, for Humanism and Social Progress." The exhibit will then be shown in all major cities of the USSR, traveling around the country for a year.

The sponsors of the exhibit are the Board for International Photo Exhibits of the Union of Friendship Societies, the newspaper *Moscow News* and the journal *Kultura i Zhizn* (*Culture and Life*).

Documentary and artistic photographs of World War II years will be given considerable space in the display.

Rules for Entering

1. Up to three 30x40 to 40x50 centimeter photographs or a series of no more than six photographs from each participant will be allowed.
2. All the entries must be received by January 15, 1985. The mailing address is:

USSR
Moscow 109518
Lyublinskaya, 1
"Peace to the World" Photo Exhibit
Board for International Photo Exhibits of the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries.

The photographs should be sent in a special (hard) cover.

3. A competent international jury will select the best entries for exhibition by February 15, 1985. Photographs not to be exhibited will be returned to their owners after February 15, 1985; those to be exhibited will be returned in May 1986.
4. One grand prize—a two-week tour of the USSR—five first prizes—a seven- to ten-day tour of the USSR—and 50 consolation prizes will be awarded.

DIALOGUE ON THE KITCHEN PARADOXES

Between Journalist Larisa Kuznetsova and Sociologist Zoya Yankova

Larisa Kuznetsova: With your help, Zoya, I would very much like to give our readers an idea of the joys and worries household chores bring Soviet women, and to tell them about certain paradoxes. For example, what's the big deal about scrambling a couple of eggs, and can a person's mood really change as a result of these scrambled eggs or omelet or whatever? The truth is that the difficulties and mood arise long before the omelet begins sizzling in the frying pan. The omelet itself is not the main point. And even exactly who makes the omelet and for whom and who has bought the bread and butter to go with it aren't the main points either. Though these certainly are important and interesting items, much more important and interesting is something entirely different: What requirements does a present-day person satisfy in the process of doing housework? In short, what interests me most about the work done in the home are its sociopsychological aspects. That, most likely, is what gives rise to the major paradoxes.

Zoya Yankova: You're quite right. Let's go into one of the paradoxes. It is a generally known fact that a working woman more often than not organizes the everyday life of her family just as efficiently as her grandmother or great-grandmother, whose only responsibility was running the household. More than that, the higher a woman's professional skill and the more value she puts on time, the higher, as a rule, is her ability as an organizer and the better she plans and carries out her duties in the home. Her professional skill seems to permeate even her ability to cook soup.

But that isn't all. More paradoxical is the fact that a woman's so-called second shift, that is, household chores, is especially hard in countries with a highly developed services industry. These, at the same time, are the countries in which the percentage of women professionally occupied in production is high and in which the level of women's skills is also more or less high. Yet it turns out that a woman who seems to have every chance to expand the limits of her free time feels for some reason obliged to spend it on household chores. Doesn't that seem odd? Well, it isn't.

Kuznetsova: In that case, I question your praising women with high professional skill for organizing their housework so well. Why should they be praised? Wouldn't it be better to reduce the amount of work instead of organizing it?

Yankova: I'd rather answer that question in your kitchen than in your magazine. I've been in your kitchen many times, and as far as I can see, you treat your chores around the house like a game you're sincerely interested in, not like a curse. Why do you do everything so perfectly and not in any old slipshod manner? Because in doing that work, you are satisfying not only your conscious, but also your subconscious requirements—creative, esthetic, prestigious and, last but not least, fundamentally psychological requirements.

A woman does the chores in her home not only in the primitive sense of cooking, cleaning, washing and ironing, but in a loftier sense, too. She makes decisions, determines the consumption in the family, manages the household, creates a zone of joy and comfort for her nearest and dearest. The level of the decisions she makes in her kitchen cannot, most certainly, be compared with the level of those she makes in production. That is so, of course. But there are fields of production, as you well know, where women are barred from decision-making and are limited to administrative work. But they, too, long to be managers if only for a while! An element of creativity is, in one degree or another, inherent in each and every person. The personality and the psychological requirements and desires of the individual should be the determining factor.

A modern woman bustling around in her kitchen is by no means out of her mind. When a person's urgent requirements are satisfied, she begins looking for other things. Today's housewife is faced with the task of creating an amtosphere conducive to producing a sense of community, of peace and joy in the family. Where you live, the tasteful arrangement of the furniture, the view from the windows, setting a festive table, large and small tokens of kindness and consideration for your dear ones, the esthetics of everyday life—do all these things really and truly mean so very much? Judging by the fuss we make about them, they certainly do. The growth in requirements, including those of a psychological, esthetic or group nature, has given rise to innumerable duties and obligations that don't lend themselves to classification but take up a huge amount of time. That brings us to the matter of consumption over and above all sensible limits.

Carpets? Pictures? Expensive chandeliers? Superfashionable clothes? Don't you think that such excessive consumerism at times not only forces people to hang the millstone of installment purchases around their neck, but drives them into constant and harassing time shortages?

A person, of course, may believe that consumerist prestige will, to a certain degree, guarantee some imaginary place in the social hierarchy. There are quite a few who think that prestigious consumption can create a semblance of omnipotence for their precious ego.

For instance, any Soviet family can now afford to spend a vacation on the Black Sea coast. So what happens? At the height of the season on the beach there's literally no room to swing a cat. And after that many are obliged to take treatment for sunburn, high blood pressure and all sorts of other ailments that could have been avoided by vacationing in the North, not the South. If a man becomes ill, it is the woman who usually takes care of him. By the way, it is also usually the women who buys and cleans the carpets, dusts the chandeliers and follows the latest fashion in clothes. Besides, they've also got to find the time to scramble the eggs we started off with. So now figure out whether it's the scrambled eggs alone that should be blamed for women's overwork at home.

Scholars studying problems of consumption do their level best to define the framework of so-called rational consumption. Not ascetic but, at the same time, not excessive either. And they come up against another paradox that is difficult to overcome. Even according to scientific norms, consumption should increase. What, in this context, are the chances of a woman's "second shift" becoming easier?

Kuznetsova: Do you mean to say that when we start wrapping ourselves in miles of fabric, both newly bought and already piled up in our wardrobes, we won't have a minute left even for scrambling a couple of eggs? But the situation is already alarming. There's no use beating around the bush: a workingwoman's free time is two to two and a half times less than that of a workingman, her overwork at home undermines her health and, to some extent, shatters a communal spirit in the family. As you've justly noted, I like pretty dishes, good furniture, even flowers in pots and fish in an aquarium. You'll agree though, won't you, that the fish do not suffer if there's discord in the family. But people do. And when the husband has too much free time on his hands, while the wife hasn't any at all, wouldn't that be a reason for the husband's getting involved in extramarital relations?

Yankova: Now you've touched on the real sore point of the problem. And that sore point has nothing to do with what is called a woman's "work at home" or "second shift." If we approach the problem from a truly scientific angle, its principal ingredient is the family as a group, as a definite element in the development of society. Everything you and I have talked about here has to do with the character of the family. And that by the way, is precisely what induced us to take as an example a situation where a woman is both employed in production and yet retains her traditional role in the home—manages the house, takes care of the family, etc., a type of family situation that is now disappearing. Other forms of organization are, however, also possible. Take this one: All the members of the family divide the household chores equally among themselves. Each of them knows how to do everything, and each one does everything. That is a sort of social identity, something the women's movement has been calling for. Finally, there's a third type of organization—when the family is a closely knit team in which every member feels responsible for each of the others and the family as a whole, in which each one undertakes the maximum of what he or she can do and also strives to achieve full self-expression. Such a family, moreover, makes active use of all available forms of public services, which relieves it of overwork and, incidentally, expands its body of free time.

Kuznetsova: Theory always looks more joyful and festive than practice. And when applied to our talk about household chores, that difference is especially great. You know perfectly well that the development of the third form of organizing home management is impeded by the inadequate state of our services. What remains is either the first form—no matter how bitterly we may rail at the vestiges of patriarchy in our everyday life—or else the second, though we do look askance at neofeminists.

Yankova: No, there I disagree. Even if the services are poor, there can always be an equitable distribution of housework and duties, in which the principle "From each according to his abilities" would be implemented. That is the road of free reciprocal agreement, not an agreement based on coercion or directives. The main words in such an agreement are not "must" or "duty-bound," but "can," "will," "want to," "with pleasure." Our sociological data shows that all these "can," "will" and "want to's" prevail. Young men assume a greater share of household chores than middle-aged; more educated men take part in household chores more readily than the less educated; in large cities the trend is more marked than in small or middle-sized towns. And there's a great deal more evidence that the family is turning into an institution of social responsibility, that relations of actual equality and collectivism are maturing.

Our portraying the family as a group has helped us classify three types: a group that does not really stick together and in which the first form of home management organization is strongest; a group that cooperates—of such families we say that the husband "helps" his wife and the children "help" their mother; and, finally, the ultimate form—the family collective organically involved with society. To create a family of the third type is far from easy.

Kuznetsova: And so, the woman as the "manager" of the home is gradually becoming a thing of the past?

Yankova: Yes. Women engaged in professional work are obliged, willy-nilly, to gradually give up old forms of managing the house. The twentieth century manifestly prefers the more democratic forms of organizing housework. ■

A WRITER MUST LIVE WHERE SHE WAS BORN

Nina Semyonova sticks with truly enviable tenacity to her belief that an artist must never cut herself off from the soil that nourishes her.

By Yelena Zonina
Photographs by Alexander Grashchenkov



Every morning seven children would shoot out of the Semyonov house, like peas from a pod, and run five or so kilometers through the woods to school. Little Nina, the youngest, would always lag behind. She kept searching for the cradle in which the Sun spent the night.

Nina first heard the strange and fearful word "war" when she was nine. The house seemed deserted. Her father and elder brothers, just like the other men in the village, had gone off to the front. From the autumn of 1941, for almost two years, the Nazis ruled Smolensk and its environs. Nina and her mother herded the cattle in pastures far from the village. On the way there and back the girl would retell the books she had read, and when each one had been read at least 20 times, she would start inventing all sorts of stories. If the end proved unhappy, her mother would always be distressed and beg her to change it.

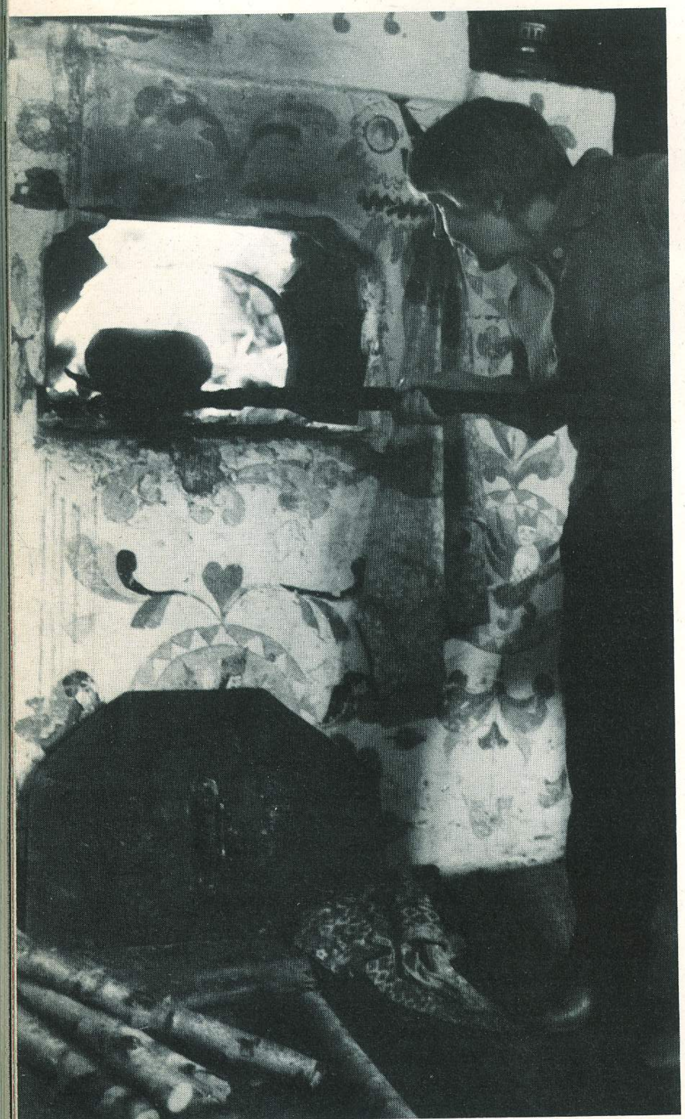
Perhaps it was then that the passion for thinking things up was born in Nina? Who knows? After all, besides literary talent, a writer must also have a gift that far from everyone manages to discover in herself—the gift of wondering, of being amazed at the world.

Life during the fascist occupation was very hard indeed. Bread wasn't baked, it was made of chaff and had to be cooked. So they ate it with spoons.

They say that childhood impressions are the strongest. That's probably why many of the writer's short stories and novels are devoted to those unforgettable years. War and children, war and love; can there be anything more unnatural than those combinations? Semyonova writes courageously and gently about the children of the war years, about young love that was nipped in the bud.

The long-awaited victory came in May 1945. There were many who never returned to the village, yet life had to go on. So new houses were built, people got married, a school was opened. After finishing it, Nina went to study at Leningrad University, and soon rumors of a new, very capable student swept the department of philology. Then she suddenly contracted a virulent form of tuberculosis (the result of her early hungry years), spent months in the hospital and received the doctors' merciless order—to leave the humid climate of Leningrad for a drier, more continental one if she wanted to stay alive. So she transferred to Moscow University.

After graduating, Nina returned to the village where she was born, and she lives there to this day. Kostinskaya is in Smolensk Region, which is in the western part of the Russian Federation. Perhaps it was the bracing air that helped her or simply her youth. In any case, she got better. And the village children were all ears when their young teacher introduced them to the poetic world of Alexander Pushkin and the mighty prose of Leo Tolstoy, to Ivan Turgenev's descriptions of nature and Anton Chekhov's fine irony and sad humor. She told them about their famous countrymen—all born in or around Smolensk—who had made invaluable contributions to Russian and Soviet culture—composer Mikhail Glinka and explorer Nikolai Przhevalsky, sculptor Sergei Konenkov and poet Alexander Tvardovsky. She began writing herself, furtively at night. Then one day she mustered up the courage to send a short story to *Ogonyok*, a popular Soviet weekly, and another to Nikolai Rylenkov, a well-known Smolensk poet. *Ogonyok* published her story and sent the author a letter of gratitude, while Rylenkov invited her to take part in a countrywide seminar of young prose writers. That was in 1959. Four years later Nina Semyonova, by that time the author of two books (now she has six collections and eight plays to her credit), was admitted to the USSR Writers Union.



"I've got a little stove. Though it has no wheels, it's very hot!"

"Stove on a Wheel"

The first company to stage Semyonova's play *Stove on a Wheel* was the Moscow Academic Mossovet Theater, one of the best. Now it is being performed in many cities. It has been running for two years, and it's still impossible to buy tickets to it.

The plot of *Stove* can be put into several lines. The life of Frosya, who tends calves, is very hard. She has five children and Vasya, her good-for-nothing husband who's a drunkard. He does his best to persuade her to leave their remote village and move to the farm's central settlement. But the main thing for Frosya is not the comforts she might have, but the house of her birth, the land where her parents had lived, where everything is near and dear to her. Vasya flies into a rage when he hears her decisive "No!" He sets fire to the house and tears down Frosya's beloved stove that had stood on a wheel and could be turned around to face the Sun. As prescribed by all good fairy tales, Frosya is rewarded for her troubles. A demobilized ensign appears and falls in love with her. He builds a new house, puts up another turning stove and asks Frosya to be the mistress of them all.

Retelling the play makes it sound simplistic. Actually, it's full of subtle humor and biting irony. It has philosophical depth and is a realistic portrayal of village life, shown not from a distance but from its very innards. The playwright defends the individual's right to be independent of circumstances, to build his or her own life, not according to them but regardless of them.

The performance was an event in Moscow's theatrical life because it produced two discoveries at the same time: a new author and the fine, inspired character Frosya, played by actress Natalya Tenyakova. Her interpretation of the heroine is a perfect blend of everyday life and parable, of documentary reality and poetics. It evokes both laughter and tears, for life is funny and sad at the same time. Frosya seems to have a limited range of problems —her house, her children, her calves. Yet that range expands to include cares and concerns common to all of humanity: "Why don't people live and let live? If you ask me, I'd say live and enjoy life. But no, they think up bombs and rockets. They make war on each other."

"Frosya is sheer luck for me," says Natalya Tenyakova. "She's my happiness, my good fortune. After a performance I sit up half the night thinking, 'Who was it that I played?' It seems to me that Frosya is a copy of Semyonova herself. She's a rare person—kind, pure, highly principled. Half of our success belongs to her."

"I Don't Need Much. . ."

The writer lives among the people she writes about, in Kostinskaya, the same type of tiny village (only eight farmsteads) she has set her Frosya in.

A narrow little rivulet winds its way among the old birches and limes. The trees reach out for the sky as though they long to support it. The stars studding its darkness look like an unbroken field of sparkling diamonds. And the silence is so complete that the very air seems to ring.

Kostinskaya was once a large, populous village, but the inhabitants began to leave. The school was closed because there were no children left. Retired collective farmers—eight old women and one old man—continue to live there, amicably and peacefully, as though they were members of one big friendly family. Their grownup children treat it like a summer country house and come to spend their vacations there.

Alexander Ignatenkov, the young chairman of the local collective farm, shows great concern for Kostinskaya. He visits it frequently, asks the old people for advice and never forgets to inquire how he can help them, whether they need anything. After all, these people are honored and respected. They were among those who started the collective farm in the thirties. Now the farm center has moved away. The "agro-city" is about a dozen kilometers from Kostinskaya. And the chairman is by no means inclined to consider as a mere whim the fact that its inhabitants turned down the chance to receive housing with all the amenities in a new settlement, preferring, instead, to end their days in the same place where they were born. He belongs to the group of collective farm managers who think that it is economically unprofitable and morally unjustifiable to get rid of small villages.

The comedy *Lyubzha* is devoted to one of the old women of the village. Many aspects of life on the collective farm are reflected in the collections *Round Lightning* and *Rainbow on a Cloudy Day*, which were recently released by Moscow publishing houses. They're retold with enviable humor, and the characters, authentic and easily recognizable, are poetically and glowingly described.

Neither recognition nor success and laudatory press reviews can change Semyonova. She's unassuming in her everyday life, in her clothes. And it's hardly coincidental that she likes to repeat a line from the Russian poet Velimir Khlebnikov: "I don't need much—a loaf of bread, a drop of milk. And this sky, and these clouds!"

It certainly isn't easy to get Semyonova to talk about herself and her writing, but she speaks with real pleasure about the people around her. She praises her friends generously. Her own private life wasn't too successful, and the friends of her school days are dear to her, always ready to share her joy or to help in any trouble. She admires the old village women and, like the poet Alexander Tvardovsky, believes: "Wisdom and education are two different things. My grannies aren't educated, but oh, how wise they are!" She remembers Tvardovsky with true reverence. He helped her at the very beginning of her career: "He could always add a drop of his very own to things everyone knows about, and that is what true creativity really is." But when Semyonova is asked about herself, her answers are restricted to a few sentences.

"Change is inevitable. Modern machinery and comfortable housing have transformed the village. To an even greater extent the lifestyle of a farmer resembles that of a town inhabitant now.

"Only if you remain near the land is it possible to follow the intermingling of the new with the century-old tenor of life, to try to record everything that is withdrawing, disappearing." ■



Top: When Nina Semyonova goes to Smolensk, she likes to stroll along its streets. Bottom: Vasya (played by actor Yuri Kuzmenkov) was in no hurry to go to work. He preferred to lie on the stove and sing songs.



HIT

VLADIMIR KISELEV, the founder and leader of the Zemlyane (Earthmen) group, is 30 years old. "We play hard rock," he says. "At first the music may appear simple, but it is packed with rich sound. In each song we try to bring out an idea that we believe should have a logical beginning and end. That is especially important for patriotic songs, which call for a complete image. We prefer such songs. Each number we play is accompanied by special light effects. Some of them even have slides and films illustrating the text. That intensifies the music and lyrics. We make all our shows a festive combination of music, lyrics and spectacle."

The high professionalism and broad repertoire of the ensemble accounts for its popularity. The age of the musicians ranges from 25 to 30.





the arts

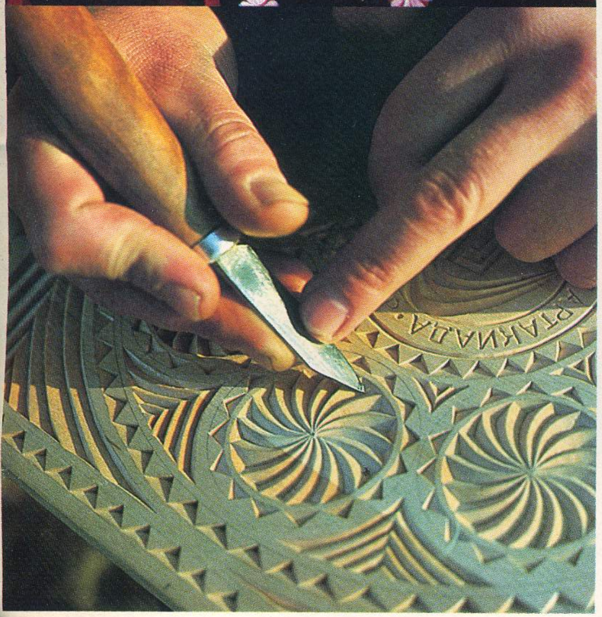
THIS painted silk tapestry was made by Valentina Yershova, an artist working at one of the textile mills in Moscow Region. Painting on textiles is both a profession and hobby for her. In her free time she creates designs for wall tapestries and curtains.

ACTORS AND PARTS

FILM actress Natalia Fateyeva's screen heroines are all charming and responsive—qualities characteristic of the actress herself. That's why even her small roles make an impression on filmgoers. As a rule, Fateyeva plays her contemporaries. The role of the well-known Russian ballerina Matilda Kshesinskaya in *The Divine Anna*, directed by Emil Lotyanu, was an exception. Among her latest roles Fateyeva favors the schoolteacher in the film *From the Life of a Criminal Investigation Department Chief*.







FOLK ART

THE old town of Gorodets, near Gorky, is one of the 11 centers of ancient Russian woodcarving and wood painting. To this day people are eager to buy the breadboxes, cutting boards, spoons, bowls and ladles with wooden roosters for handles, and other kitchen utensils made there.

MUSIC

The concerts given at the Kiev Center of Organ and Chamber Music are very popular. The performers are local musicians and guests from other cities and countries. The exquisite architecture of the hall adds to the enjoyment of the music.





A FLIGHT FROM

ELBRUS

By Aloiz Fil
Photographs by Alexander Tikhov

A GOOD beginning is crucial to any undertaking, especially a hang gliding flight from Elbrus. It is important to catch a moment between gusts of wind and to run quickly, in a burst of speed, toward the abyss. The pilot must also guess the angle of approach to avoid simply falling onto the rocks. In a gently sloping dive in air which is rarefied at this high altitude, the pilot has to gain the speed necessary for a controllable flight.

It is always cold here. If you stand still for a long time, the icy wind penetrates even through fur overalls. And catching the proper moment for a flight means standing still for a long time while fully prepared to take off. The pilot's body is tied to the suspension by belts, and his hands squeeze the control trapezium. The fabric of the delta-shaped wing is tense over his head, threatening to tear him away from the slope before the right moment.

Perhaps in a second. . . .

He takes a quick look around. The world is strange here. There are no smells or sounds, only the blue sky and the white snow, which are welded together by the uneven seam of the main ridge of the Caucasus. The Sun is blinding. Its unremitting glare comes up from the eternal snow below.

It is time. The wind has abated, and everything surrounding the pilot seems to have disappeared. Will and muscle have now become one and are rushing away from the ground following a precisely calculated trajectory. The only thing that the man hopes for during the next several seconds is to find some support in space. Here it is. The belts of the suspension are pulling softly but strongly. This means that the wing is being supported by an air current. Now he has to move the trapezium slightly away from his body. He makes a smooth exit from the dive and turns into the wind.

This is Alexei Butenko's eighth hang gliding season and his fourteenth flight from Elbrus. He knows from experience that there is always a strong wind from the west here. But the nearest ground suitable for a landing lies in a southeasterly direction. That is why the pilot has to maneuver subtly, with proper allowance for the drift.

He glides at a height of about 400 meters over the white slopes. The paths blazed by mountaineers are clearly visible in the hollows filled with fresh snow. Not all alpinists can make it up them even without a load because the dangerous ascent takes a lot of time and immense effort, and the shortage of oxygen quickly exhausts them. And Butenko has to carry his hang glider, which weighs 25 kilograms, to the peak of Elbrus. It's good if the weather is favorable and stable for enough time for the pilot to rest after the ascent and make a flight on that same day. But Butenko's flight is taking place on the fifth day after his ascent. He had carried the hang glider close to the top on his first day there, but the weather has been deceptive. At night the stars would shine in the sky, and Butenko would leave the warm hotel before daybreak with the climbers and go out into the cold and silence of the mountains. After overcoming all the difficulties of the ascent to the place where he had left the hang glider, he would see that it was too dangerous to fly in that weather. Either a storm would be raging or clouds would be crawling along the slopes. If you dove into them, nobody would ever find you. He would descend with the regular group of mountaineers.

Now he's approaching the three-story building of the hotel named Refuge of 11, which is situated higher in the mountains than any other hotel in the world. It resembles a metal airship. Climbers in multicolored jackets are crowding near the entrance. They are looking at the sky and waving their hands. Butenko is flying 500 meters or so above them, accompanied by their encouraging words in German, English and Czech. He remembers that a group from the international mountaineering camp came to the hotel the previous night. He wants to shout something in reply, but he has enough time only to smile. The cylinder-shaped cottages of the summer alpine skiing center have already appeared below. The skiers are stopping on the slopes, producing snow fountains with their skis, pointing at him with their poles and shouting, "Slow down!" Some joke!

The instruments attached to the pillar show that the horizontal speed is 50 kilometers an hour and the vertical descent velocity is 7 meters a second. Everything is all right.

And here is the edge of the snow line. The supports of the aerial tramway rise over the stone peaks. Its passengers are also doing their best to encourage the pilot by merry exclamations and jokes. This encouragement comes in handy because a really serious moment is approaching. But there is still time to prepare for it.

Butenko is now flying over a building resembling a hangar. It is the upper station—Mir—of the switchback aerial tramway. The bell is ringing to signal a departure, and a bright red gondola emerges from under the hanger's awning and starts gliding smoothly along the thick steel lines. He made two flights from Mir in the summer of 1980. At that time he didn't risk ascending to a greater altitude. The news that a group of Leningraders had flown from the double peak for the first time a month later reached Butenko at home and had dampened his ambition.

He'd fly, too, he thought, but it was a pity that he wouldn't be the first to do it. And he did indeed fly after that. Each summer, engineer Butenko spends his vacation on ▶



Alexei Butenko, a 30-year-old engineer from the northern Russian town of Cherepovets, has made a series of hang gliding flights from Elbrus, the highest mountain in Europe.





The air currents are very strong where the three gorges meet. A mistake can cost the pilot his life.

Elbrus or, to be more precise, over it.

And now he is already flying over Krugozor, an intermediate station of the aerial tramway. Three ravines converge in this place. They operate like three air tunnels and make it very difficult to catch the wind. There is no place to land in an emergency—only rocky abysses and stony screes can be seen. Furthermore, there are no upward thermal currents, and all the currents are dynamic—along the ravines and downward, toward the Baksan Valley. This is where a real struggle against the elements is waged, and there are no rules to guarantee success. Everything depends on your nerves, on the intuition developed by experience. Along with the wing, even the pilot's face and his forehead, wet under the helmet, catch the vibrations of the air jets. With an instantaneous and soft feline movement of his hands and his whole body, he controls and directs the glider, preserving stability and strictly following the calculated line of gliding.

The wind literally blows him away from the Krugozor station to the Azau ravine. The air current is smoother and not so unpredictable here. The snow, ice and bare rocks of high mountains have been replaced by green alpine meadows. Leafy bushes grow along a merry river.

Making relaxed turns from one slope of the ravine to another, Butenko is getting ready to land near the Azau tourist hotel. The area is a bit narrow but suitable for his purpose. Cars are parked close by. One of them is his Lada with a spacious roof rack for carrying the hang glider—after it has been disassembled, of course.

People are running toward the landing strip. Butekno recognizes among them his friends from the hang gliding club. They are not experienced enough yet to make flights from Elbrus and for the time being will fly from the neighboring Cheget, the height of which is just more than half that of Elbrus. The aerial tramways carry them almost to the top. These tramways were built for alpine skiers. In winter there are too many people on the mountain slopes. But in summer the area is used by hang gliders.

There are already hundreds of hang gliding clubs and thousands upon thousands of hang gliding pilots in the USSR. Their number has been growing rapidly, but only a few of them have made flights from Elbrus. This is just the beginning, and there are still only a few trailblazers.

Butenko is making an approach for the landing, the last meters of the flight. He sharply moves the trapezium away from his body, and the hang glider seems to prance, losing speed. The ground is rushing up under his feet. It's not easy to keep your balance, but a good hang glider always manages to do it.

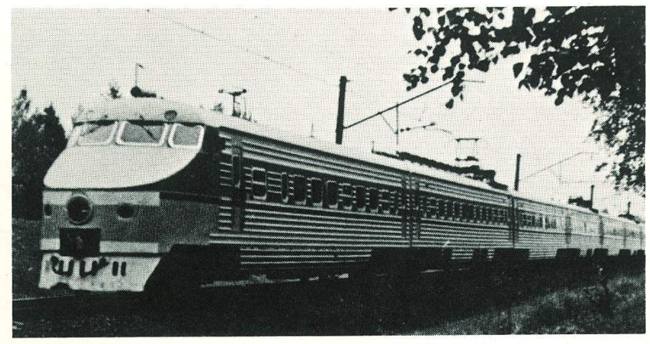
The landing . . .

Alexei is soaked with sweat and weak but happy.

He looks at his watch.

The flight from Elbrus lasted 37 minutes. ■

NEXT ISSUE



IT'S NOT THE END OF THE TRACK

Railroad Renaissance

Everything from old steam trains to modern supertrains will roll across the pages of the November issue. Soviet rail freight turnover amounts to more than 50 per cent of the total world rail freight turnover, and the length of the tracks crisscrossing the USSR makes up 11 per cent of all the track in the world. The Soviet Union's enormous distances from coast to coast and its high rates of economic growth require good communications. This makes rail transport truly indispensable since it is economical and has a large carrying capacity. What is more, electric railroads are quite harmless from the ecological point of view. Extensive electrification programs are now under way. Hop aboard and learn more about our rail system.



OFF THE BEATEN PATH: TUVA

High in the Mountains of Asia

Tuva is an autonomous republic located in the very heart of Asia. Up until the early part of this century it was a backward feudal, patriarchal country populated by nomadic cattle breeders and hunters. Within the past 40 years the republic's industrial output has increased by 50 times and its agricultural produce by 20 times. Next month we will tell you about Tuva's past and present, and we will also introduce you to three American biologists who went to Tuva to carry out environmental protection research with their Soviet colleagues.

COMING SOON

Soviet Legal Institutions Through the Eyes of American Lawyers



TURKMENIA

Solar power is widely used in Turkmenia. This installation is a reactor for accelerating the growth of Chlorella, a genus of green algae rich in vitamins, used as a fodder supplement.
See article on page 44.

Photograph by Gennadi Koposov